PACKAGING CATALOG

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XUM

1935 EDITION

PACKAGING CATALOG

★ Practical Information on Packaging

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★ Advertisers' Index

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★ Catalogs of Machinery Equipment and Supplies Used in Packaging Industries

★ Complete Buyers' Guide

See Pages 133-156

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FOREWORD

IN 1929 the first edition of the PACKAGING CATALOG was published in response to a demand for permanent reference information on package materials and procedure. It filled a much needed want among production and sales executives who sought a reliable source for the planning and purchase of equipment, package supplies and service. Now, in its seventh annual edition, the book continues to function in that capacity and in accordance with present-day needs. Besides additional information, the book includes material of previous issues, revised and brought up to date in accordance with current practice.

Proper usage of the book is essential if its full value is to be obtained, and it is recommended that the reader consult both editorial and advertising pages with reference to the subjects on which information is desired. The Table of Contents will be found to list each of the various subjects together with the reference to and numbers of those advertising pages that carry specific information relating to a given subject. The buyers' directory in furnishing names of manufacturers of equipment, materials and service also supplies additional sources from which supplemental data on various subjects may be obtained. Advertisers as well as non-advertisers are listed.

To those already familiar with packages and packaging practice the 1935 PACKAGING CATALOG will prove an invaluable reference work; to the initiates in the use of packages the book will serve as a dependable guide in determining the steps that should be taken in the selection of packages and packaging equipment. To the latter especially, a complete reading of the book is recommended.

A complete list of the contributors—authors as well as those who furnished correlative information—together with their affiliations is included on page 10. Each is regarded as an authority on the subject, and the compilation combines, we believe, the most complete treatise on the subject of packaging which is available. To those who have so generously contributed of their time and experience our sincere thanks are extended. And this appreciation, we feel certain, is likewise shared by readers and users of the 1935 PACKAGING CATALOG.

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M. D. Penney, Forbes Lithograph Mfg. Co.
William H. Perry, Cambridge Paper Box Company

Frederic Remington, Peerless Tube Company
F. L. Robinson, Dennison Manufacturing Company
M. Rothstein, Crompton-Richmond Co., Inc.

Paul W. Sampson, E. I. DuPont de Nemours & Co.
C. E. Schaeffer, Stokes & Smith Company
W. Edward Scott, Bagpak, Inc.
Roy Sheldon, Kay Displays
John A. Silver, F. J. Stokes Machine Company
H. S. Spencer, General Plastics, Inc.
A. J. Sterling, Manufacturers Representative

R. W. Thomas, The Forbes Lithograph Mfg. Co.
F. L. Triggs, Riegel Paper Corporation

W. F. Walker, Cleveland Container Company
B. G. Warner, The Warner Brothers Co.
Arthur J. Weiss, Robert Gair Company, Inc.
W. P. White, White Cap Company
J. L. Whitehurst, Burt Machine Company
J. P. Williams, The Brooks Bank Note Co.
R. E. Williams, B. F. Gump Company
O. W. Williams, Williams Sealing Corporation
D. V. Williamson, Williamson Glue and Gum Works

THE YEAR'S PROGRESS IN PACKAGING—A REVIEW

by D. E. A. Charlton

OF the several industries dependent on packaging as a means of containing, utilizing and merchandising their products, that which attracted more attention during 1934 was unquestionably the liquor industry. To the suppliers of equipment and package materials, this represented a new market for many; a rejuvenated one for those who had formerly enjoyed a fair business from that source.

Previous to and following the red-letter December fifth of 1933, the manufacturers of packaging machinery, label printers, bottle makers, closure concerns and other suppliers found their plants working overtime in a frantic effort to keep up with orders. The Nation's appetite for that which had been legally withheld required an immediate appeasing, and the first problem was that of producing. Packaging, as such, was exemplified in its earliest elements: containers to hold and satisfactorily dispense the product. Following the first rush to satisfy the public demand, distillers, rectifiers and vintners, realizing that in its rebirth the industry called for new methods of distribution, commenced to give consideration to the package as a merchandising factor. In the beginning, various handicaps, such as legislation as relating to labels, Government seals, etc., impeded progress. But these difficulties—mainly the result of an effort to bring order out of chaos—gradually lessened or were satisfactorily overcome.

The first constructive work in the cause of the package assembly was in the direction of the needed materials—closures, secondary closures, wrappings, etc.—which would provide certain protective or counterfeit-proof features. Stock bottles of a wide variety were available, also cartons and label designs. Since then there has been a marked swing toward improvement in design and in design assembly, and the 1934 crop of liquor packages shows a definite leaning in the direction that has been taken by other industries who have come to recognize the package as something more than just a container for a product. While no estimate can be placed at this time on the package requirements of the liquor industry, it is safe to say that the market for equipment, materials and design service is one that is most attractive and bids fair to remain among the more important groups of the future.

Some measure of the interest which packages have created during the past year is evident in the number of exhibits and competitions recorded from various sections of the country. The 1933 All-America Package Competition and the Wolf Package Competition, both held early in 1934, registered a greater number of entries than previously; the package show staged during the National Wine & Liquor Convention created well-deserved attention, and various others, sponsored by advertising clubs, educational institutions and other associations in different parts of the country, helped to bring about a better recognition of package principles and usage. In this connection it may be pointed out that the tendency of these promotional efforts is toward the practical rather than the purely artistic side of the package assembly.

Encouraging, too, is a definite swing in package design toward simplicity and greater purpose. There are fewer evidences of the "busy," somewhat aimless packages which attracted but were not attractive. The trend is toward high visibility, legibility and easy recognition—more adaptability to store conditions—a realization that the package does a bigger share of the selling job—greater attention to production and the materials used—a higher bid for customer convenience. All of these have come about through better understanding and closer cooperation between users of packages, suppliers of materials and equipment and designers.

There is almost a marked absence of design "tricks"—again the swing toward package simplicity. This does not mean, however, that the effort toward convenient "gadgets" has ceased for, on the contrary, this year's offerings exceed those of previous seasons. But these have taken a sensible direction and have been applied in such a way as to curry the favor of the ultimate package user Women have been the most consistent sufferers from packages hard-to-open, difficult-to-close and similar grievances, and their complaints are beginning to bear fruit, with the result that designers and makers of packages are striving to overcome such obstacles and are really getting somewhere.

In many lines, such as men's wear, sporting goods and certain so-called seasonal items, there has been an increase in the adoption of "gift" packages, the merchandise manufacturers, wisely enough, deciding that an impetus could be given to sales through the inclusion of re-use containers or displays. Many of these have been ingenious, as well as successful, and it can be expected that the practice will be continued as well as improved, especially since many of the newer packaging materials, such as plastics, are available.

The tendency toward "family resemblance" in packages for group or allied products continues, and this trend also shows the refinement evident in individual packages. No previous year can record as many "big" package design or redesign jobs—that is, those undertakings in which a large number

of packages were styled for a single manufacturer or distributor. Notable among these were the auto supply parts for Chevrolet and Ford, the Montgomery Ward packages, Sears-Roebuck, Goodrich Rubber and many other well known groups.

Whatever criticisms may be raised of the NRA and its various activities, it now seems certain that at least some of these have had a salutory effect on packaging supply interests. While certain trade associations had existed previously within the packaging industry, the NRA served to quicken their efforts not only in trade practices but in bringing about a better understanding of the mutual problems of the members. The more recently formed bodies have likewise benefited and these advantages have been passed on to customers.

A still further advantage from such cooperation may be hoped for in the future; this in the direction of Governmental legislation as it may affect packaging. For it is recognized that the supply group of the packaging industry represents a substantial financial factor and its influence must be counted upon when Congress and official Washington make their decisions. During 1934 there was ample evidence of package recognition, even though this was not of the spectacular sort, but this year's Congressional sessions may expect a greater share of attention from that source. Pending are bills that relate to various forms of design protection, package privilege, labeling and the like.

A survey conducted early in the year by MODERN PACKAGING among package users brought out the fact that packaging costs had increased practically twenty-five per cent. But there was little complaint of this, the concensus of opinion being that improved design and construction had either increased sales, had enabled their continuation or prevented a droping off. With a return to more normal conditions and with increased production on the part of the suppliers, there is reason to believe that packaging costs will not exceed present averages, although it is quite probable—with the increasing recognition of the fact that "the package can do a bigger selling job"—that higher unit package costs will be given serious consideration by the product manufacturers.

To record each and every improvement in packaging equipment and supplies during the past year will not be attempted in this treatise. These will be found in the following chapters of this book and also in the issues of MODERN PACKAGING for the past twelve months. It is to be admitted, however, that 1934 was a year of outstanding accomplishment—a progress that was made in spite of certain economic handicaps evident in some of the other industries. It was a year in which packaging reached a high point in the appreciation of the user—the realization of the true function of the package—its ability to sell goods. This will be evident to anyone who takes the trouble to thoroughly analyze any of the successful packages of 1934—perhaps those of any year, although this year's collection is more extensive than formerly. Such an analysis will consider (1) the package problem to be met and (2) the manner in which it was solved. As the result of previous experience, either on his part or that of others, the product manufacturer during 1934 was able to reach more sensible conclusions on package procedure. His suppliers, with new and improved materials, equipment and service, were better able to aid in the solution of the package problem. Not all of the packages of 1934 show that full opportunity was taken of these conditions, but the opportunity existed nevertheless.

Practically every machinery manufacturer effected refinements in his equipment. Higher speeds, greater adaptability and diversification. While not new this year in the packaging field, the use of the photo-electric cell as applied to wrapping and other purposes where color or design registration is desirable was extended. Vacuum packing in glass and metal, vapor sealing and the production of positive sealed inner liners for cartons were among the outstanding accomplishments announced and successfully applied this year.

In the container field: a more extended use of transparent boxes and displays; thin blown glass tumblers; process-labeled bottles; embossed collapsible tubes; improvements in molded plastic containers, and the introduction of stock molded boxes. As applied to cartons and labels, the use of protective varnishes and lacquers was one of the features of the year, the indications being that this practice is just at its beginning.

As previously noted, activities in the liquor field greatly encouraged the development of closures, particularly of the molded, double- and single-shell metal types. Also tamper-proof closures of various types. Secondary bands or caps likewise came into prominence and were widely used.

Printed transparent cellulose, applied as wrappings or used as bags continued in high favor, and certain types of rancidity-resisting wrappings were introduced. The use of foil wrappings increased, other elaborations of this material being in the form of bags. Similarly, foil labels were in greater evidence than previously. Many new designs in fancy and decorative papers for box coverings and wrappings were in evidence, as were also new colors and patterns as applied to printed string.

These are but a few of the high-lights of the 1934 packaging picture. The next twelve months will flash many more for the industry is just beginning to find its stride as a recognized asset in the constant urge for competitive sales.

DIRECTORY OF PACKAGE-TESTING AND ADVISORY INSTITUTIONS

by Waldon Fawcett

THIS muster represents an assembly for reference purposes of the agencies—public, semi-public and private—that are in position to contribute, directly or indirectly, to a knowledge of packages and packaging. In part, the inspiration for this roll call has been found in the disappointment expressed, now and again, by packagers over the comparatively small number of package-proving establishments equipped for miscellaneous investigation and experiment. From the implied reproach has sprung the desire to demonstrate that packagedom has unsuspected storehouses of technical data and expert opinion in the institutions which, if not devoted to appraisal of packages in their entirety, render no less valuable "intelligence service" on package materials, package designs, etc.

American Bottlers of Carbonated Beverages, 726 Bond Bldg., Washington, D. C.: Maintains, incident to its service activities, a trade mark bureau which comes within hail of packaging through efforts to stabilize notations on lithographed crowns, etc.

American Management Association, 20 Vesey St., New York: Research on packaging carried on incident to the planning for the annual Packaging Conference, Clinic and Exposition.

American Society for Testing Materials, 1315 Spruce St., Philadelphia, Pa.: Limited in its service to the packaging industries but makes some contact via its work on the standardization of specifications and methods of tests for miscellaneous materials such as papers, etc.

American Spice Trade Association, 82 Wall St., New York City: Has assembled considerable data on packaging in the spice field incident to simplification or standardization of spice containers.

American Standards Association, 29 West 39th St., New York City: A federation of 37 national technical societies and trade associations designed to serve as a clearing house through which the standardization work of technical and industrial bodies is correlated. Devoted, prior to 1933, to national industrial standards, the American Standards Association, in that year, came into the packaging picture in a large dimension through taking over, from the National Bureau of Standards, the organization units known as the Division of Trade Standards, the Division of Specifications and the Division of Simplified Practice, all of which are concerned both directly and indirectly with packaging materials and packaging practice.

American Veneer Package Association, Washington Loan & Trust Bldg., Washington, D. C.: Scope of research indicated by title.

American Warehousemen's Association, 222 West Adams St., Chicago, Ill.: A resource for the answering of technical questions bearing upon package design and package construction as influenced by considerations of storage in, and distribution from, public warehouses. Also for details on the procedure of repacking or repackaging as carried on in local or regional warehouses.

American Waxed Paper Association, 342 Madison Ave., New York City: This organization claims that its standard requirements for packaging have resulted in the elimination of many needless sizes and that the organization has further contributed to the cause of better packaging by establishing standards for quality, weight, etc.

Associated Cooperage Industries of America, 2008 Railway Exchange Bldg., St. Louis, Mo.: Studies of the properties, construction and uses of tight and slack wooden barrels and kegs.

Associated Knit Underwear Manufacturers of America, Mann Building, Utica, N. Y.: Has on file data accumulated preliminary to the adoption of five standard sizes of boxes for the underwear line.

Bureau of Business Research, School of Business Administration, University of Pittsburgh, Pittsburgh, Pa.: Has conducted packaging studies, notably "The Investigation of Consumer Attitude Toward Meat Packages," carried out several years since with the cooperation of the *National Provisioner.*

Bureau of Fisheries, Department of Commerce, Washington, D. C.: A national bureau concerned with the maintenance and extension of the commercial fisheries of the United States and Alaska. Some years ago the bureau gathered, at first hand, valuable information on the containers and packages used in shipping shucked oysters. During the past year the bureau has established a refrigeration laboratory to facilitate study of the improvements in the methods of handling fresh fish. Technologists of the Division of Fishery Industries are devoting much attention to the packaging of fresh, frozen and smoked products and will be in a position to give authoritative advice to packagers.

Census of Manufactures, and Census of Distribution, The Bureau of the Census, Department of Commerce, Washington, D. C.: Outstanding sources for authoritative statistical information covering the production and distribution of all classes of packages and packaging materials.

Container Testing Laboratories, Inc., 300 Fourth Ave., New York City: An organization of consulting engineers specializing in the design, construction, packing, testing and transportation problems of containers for all commodities.

The Cotton-Textile Institute, Inc., 320 Broadway, New York City: With the object of extending the uses of cotton, has carried on extensive experiments and tests on new uses for cotton bags and other cotton containers.

W. V. Cruess, Associate Professor of Fruit Products, 336 Hilgard Hall, College of Agriculture, University of California, Berkeley, Cal., has gathered first-hand valuable information on the packaging of fruit products, etc.

H. C. Diehl, U. S. Agricultural Experiment Station, Wenatchee, Wash.: Specialist in charge of federal investigations of the packaging of "frozen pack" of berries and other fruits, vegetables, etc.

Federal Trade Commission, Washington, D. C.: Creator of the institution known as the Trade Practice Conference which is employed, on occasion, to bring about concert of action in an industry covering packaging practices. Data available on specific projects, for example, the recommendation to the spice trade of standard containers for retail units.

Forest Products Laboratory, Madison, Wis.: Operated by the Forest Service, U. S. Department of Agriculture, in cooperation with the University of Wisconsin. It has a division devoted to containers and has carried on, over a period of years, much valuable research on containers. The information obtainable at this source is not confined, as many business men have assumed, to wooden packages.

Freight Container Bureau, American Railway Association, 30 Vesey St., New York City: Has outlined, in a large number of publications, efficient and economical methods of packing and shipping various commodities. Concerns itself with crates and crating rather than with internal packing and packages but has also carried on some research work on inside containers, as, for instance, the study of cans for liquids, semi-liquids and pastes.

Glass Container Association of America, 19 West 44th St., New York City: Carries on a continuing program of research on the various classes of glass packages such as preserve glasses, drug and pharmaceutical bottles, cheese jars, etc.

Institute of American Meat Packers, 506 South Wabash Ave., Chicago, Ill.: Incident to the work of standardizing packs, the Institute has carried on a considerable amount of research on packages as, for example, lard cans, sausage and sliced bacon cartons, wrappers for smoked meats, and glass jars for vinegar-pickled products. Merchandising investigations conducted to ascertain necessity for changes in the size and weight of packs.

League for the Suppression of Design Piracy, Graybar Building, New York City: Includes among its objectives protection of package designs and has in hand evidence of evils of design invasion.

Library of Congress, Washington, D. C.: Has a fairly complete collection of books in English and foreign languages on packaging in all its branches, and bound volumes of periodicals devoted to the subject. The one best source of out-of-print publications. Volumes may not be withdrawn from the Library but may be consulted in the reading rooms and photostat copies obtained when circumstances warrant. U. S. Copyright Office, a branch of the Library, registers art subjects such as are employed in gift packaging.

Merchandising Research Division, Bureau of Foreign and Domestic Commerce, Washington, D. C.: The Costs and Operations Analysis Section has inaugurated, incident to general surveys of wholesale and retail distribution, a series of studies of packages and packaging practice. The current example is the study of proprietary packages, incident to the National Drug Store Survey.

Metropolitan Life Insurance Co., Policyholders' Service Bureau, 1 Madison Ave., New York: "The Use of Style and Design in Industry," and other reports touching packaging practices are published by the Division of Marketing and Distribution.

Modern Packaging, 425 Fourth Ave., New York City: Maintains a permanent exhibit of packages and packaging materials, together with photographs and catalogs of packing equipment, general and specific packaging information, etc.

National Alliance of Art and Industry, Inc., 30 Rockefeller Plaza, New York City: Maintains a library of design information and a laboratory for design experimentation and conducts a vocational guidance and placement service (maintained by the Art Alliance of America) for artists and designers.

National Association of Waste Material Dealers, Inc., Times Bldg., New York City: The salvage and reclamation division of this organization is a listening post for information on the salvage and reclamation of containers.

National Bureau of Standards, Washington, D. C.: The principal Federal scientific laboratory, which serves the cause of progress in industry. Has the dual function of a research agency and official testing station for all branches of the national Government in examination of samples and verification of Departmental purchases. Scrutiny of packages, as such, is confined principally to the package standardization projects of the Division of Simplified Practice. Practical aid for packagers is contributed by numerous specialized studies of packaging materials, notably papers, inks, adhesives, etc. In 1933 major portion of the work on simplification and commercial standards was transferred to American Standards Association.

National Canners Association, 1739 H St., N. W., Washington, D. C.: Packaging is a major subject in the permanent program of this organization.

Following the adoption of 27 standard sizes of cans, merchandising studies are in progress to ascertain the need of modifications or revisions of the package schedule.

National Cigar Box Manufacturers Association, 236 Chestnut St., Philadelphia, Pa.: Channel for informative contact with a highly specialized section of the container industries. Also sponsors the Wooden Cigar Box Boosters Club.

National Committee on Wood Utilization, Washington, D. C.: Has assembled and published data and suggestions on the re-use of wooden packages and the use of short-length lumber for package construction.

National Confectioners' Association, 111 W. Washington Street, Chicago, Ill.: Maintains a trade mark "search" service and has carried on research work on special aspects of packaging.

National Paint, Oil and Varnish Association, 2201 New York Avenue, N. W., Washington, D. C.: Maintains a trade mark bureau and committee on trade marks which make indirect contact with packaging activities in the effort to prevent duplication of dress of goods within the industry.

National Paper Box Manufacturers Association, 802 Liberty Trust Building, Philadelphia, Pa.: Clearing house for information on set-up paper boxes.

National Paper Trade Association of the United States, 420 Lexington Ave., New York City: Contacts the packaging field via its research work on gummed tape, tissue papers, paper bags, etc.

New England Council, Statler Bldg., Boston, Mass.: Carries on a consistent campaign to encourage the packaging of farm products under the "New England Quality Label."

New York University, Washington Sq., New York City: Has conducted, in its Department of Marketing, comparative tests to ascertain consumer preferences for package design and package color. A typical test was that to measure the reaction of a representative cross-section of the public to several tentative designs for a new package for Wheatsworth Whole Wheat Crackers.

Package Manufacturers: All the leading manufacturers of packages are ready to place their facilities at the disposal of customers or prospective customers and to give the benefit of their experience in advice on package selection. A number of the package producers have service arrangements whereby their engineers, when made acquainted with the special requirements of a particular packer, will submit without obligation explicit suggestions for suitable packages or full-scale models of original package units.

Package Standardization Specialists: The U. S. Department of Agriculture has, in its Bureau of Agricultural Economics, specialists who are the best sources of information on all the phases of package standardization which embrace baskets, crates, boxes, barrels, sacks and other packages for fruits and vegetables.

Packaging Machinery Manufacturers: All the leading manufacturers of packaging and wrapping machinery, mechanical labelers, etc., are prepared and willing to give expert advice on questions of package policy which are dictated or influenced by considerations of weighing, sealing, handling, etc. Naturally, each individual machinery builder is best qualified to give advice on package designs and package construction that has in contemplation the employment of his particular machinery.

Packaging Section, Transportation and Communication Division of the Bureau of Foreign and Domestic Commerce, Washington, D. C.: The Commerce Department's agency for packing research and dissemination of information. Supposedly concerned primarily with packing (especially for overseas shipment) as distinguished from packaging, but nevertheless a valuable source of data for packagers. Most important contribution to date is a series (as yet uncompleted) of bulletins on the various types of packages entering domestic commerce. Bulletins are available on fibre containers, wooden boxes, wooden crates, plywood boxes, wire-bound boxes, nailed wooden crates, parcel post packages, etc.

Paper Bag Manufacturers Institute, 11 West 42nd St., New York City: Information bureau on the paper bag medium in general and particularly its later modifications such as the "window" bag, etc.

Paperboard Industries Association, 608 South Dearborn St., Chicago, Ill.: Program of work includes research and market studies in the field of packaging and container manufacture.

Plywood Box Manufacturers Association of America, 260 Tremont St., Boston, Mass.: Directory service to a section of the industry.

Don L. Quinn Company, 609 N. La Salle St., Chicago, Ill.: Maintains laboratory for box testing and container designing. Completely equipped with drum testers, compression testers and other necessary instruments.

Railway Express Agency, Inc., New York City: Gives counsel to shippers or other interested parties on "good packing," "good wrapping" and "good marking." Specific rules or recommendations for eleven different classes of commodities.

Standard Container Manufacturers, Realty Bldg., Jacksonville, Fla.: Seeks to promote uniform customs, usages and standards for all fruit and vegetable packages, and carries on research in economies in manufacture.

Steel Barrel Manufacturers Institute, Keith Bldg., Cleveland, Ohio: Research and tests necessary for recommendations for steel barrel drums, etc.

Superintendent of Documents, U. S. Government Printing Office, Washington, D. C.: "Uncle Sam's mail order book store." Has for sale, at prices approximating cost of production, the various Government publications on packages and packaging, in-

cluding the complete records of Congressional hearings on proposed packaging legislation.

Traffic, Receiving and Marking Group of the National Retail Dry Goods Association, 225 West 34th Street, New York City: Has assembled data on store packaging, etc. Has published reports on unit packing, shipping containers and store packing.

Wirebound Box Manufacturers Association, 111 West Washington St., Chicago, Ill.: Tests wirebound boxes and designs new packages. Prepares specifications for styles of wooden wirewound boxes.

United Typothetae of America, 1200 Tower Bldg., Washington, D. C.: Deals with packages, incident to its research in the field of merchandise distribution and market analysis. Concerned especially with the various aspects of package printing.

U. S. Food and Drug Administration, Department of Agriculture, Washington, D. C.: The official agency for the enforcement of the Federal Food and Drug Act. Stands ready, in the position of counsellor, to advise packagers of food products on what constitutes "misbranding" and to indicate what policies in package design will absolve packagers from any suspicion of "slack" packaging or "short" packaging. Illustrative of the practical research work of this regulatory institution is the comparative study of tea packages, undertaken to ascertain the comparative advantages and disadvantages of the different species of household packages for tea. This administration has, in its food control laboratory, a mineral water and beverage unit that is a source of information on the subject indicated.

United States Patent Office, Washington, D. C.: Supplies, on order by number, at a nominal price, printed copies of designated design patents covering packages, also mechanical patents covering package features with working arts, such as closures, etc. Accepts subscriptions for the delivery by mail of the weekly issues of the *Patent Office Gazette*, the official publication, which lists, illustrates and indexes the patents issued and trade marks registered, with the names of applicants. The *Gazette* likewise enumerates by title the package labels on which copyrights have been obtained at U. S. Patent Office.

The United States Printing & Lithograph Co., Cincinnati, Ohio.: This house has a trade mark bureau which affords information and suggestion on the subject of packaging. In 1931, the company did important research on private brand packaging.

Wolf & Company, Department of Business Analysis, 1616 Walnut St., Philadelphia, Pa.: Has, of date of the past few years, a number of surveys and studies of packaging and kindred subjects, such as the "Analysis of the Set-Up Paper Box Manufacturing Industry," conducted for the National Paper Box Manufacturers Association.

Wooden Box Bureau of the National Association of Wooden Box Manufacturers and National Lumber Manufacturers Association, Conway Building, Chicago, Ill.: Promotional work has included research on the development of small nailed wooden boxes for unit packages.

FACTORS GOVERNING PACKAGE DESIGN

by Roy Sheldon

THE design of a package is primarily determined by the life that package will lead. It leads one life at the factory, from its inception until it is a finished production job. It leads another life in the store, and it has to get there in immaculate condition. Its last life is in the home, where it must be opened and disposed of. Each of these stages is equally important, and each definitely affects the design. They must be considered and carefully thought out before a specific design is decided on.

The next step is to formulate, as nearly as possible, the particular job that the package must do. It must contain the merchandise and protect it. It must, in most cases, display that merchandise and attract attention to it. Finally, it must sell that merchandise—sell it in the store, from shelf, counter or window, and sell it in the home—by explaining its uses and giving directions for its proper application.

The package is not an advertising device alone. In fact, where there is no advertising, it has a greater job to do than when it is supported by radio page or booklet. The package is the actual thing bought, paid for and carried home. It will be made in quantity and the design should have a life of two years or, in most cases, considerably longer. For these perfectly obvious reasons the designing of a package, which in the present state of American business is a comparatively disorganized activity in a comparatively new business strategy, absolutely justifies a considerable investment in time, thought and money to achieve the most efficient and practical result.

After the job the package has to do has been stated, the first limiting factor is

Costs: The nature of the merchandise, its retail price, the quantity packaged, will closely determine the maximum cost limit. On a dollar face powder this may be ten cents; on a kitchen soap,

it may be two cents, but every one concerned with the design or the production of the package should be furnished in the beginning with a maximum cost limit within which to work. When this limit has been established, it is possible to choose

Materials: In terms of maximum cost allowable, it is advisable to consider all the *possible* materials. A given unit of merchandise may possibly be packaged in glass, tin, cardboard, transparent cellulose, molded compounds, paper or other materials. The cost limit may rule out some of these immediately, but those that remain should be given comparative consideration. Knowing the possible materials, the choice of *which material* is dependent upon two factors. The first is its suitability to contain the merchandise. The second, its suitability to sell the merchandise. Production factors and the matters of plant handling, as well as the entire distribution system through which the package must go, deserve precise consideration in choosing the material for a container and a protector of the merchandise.

In rating it as a "selling" package another set of considerations will involve consumer convenience, use in the home, display value in the store, etc., even to such details as practicability of furnishing dummy packages for display purposes at a low cost. These factors immediately bring up the

Merchandising Plan and Objectives: The design of a package should be a direct result of the merchandising plan behind the product. Business no longer decides that it will put out a pint of this, or three ounces of that, at such and such a price. It plans to suit consumer convenience, to out-think competition, and to promote and sell its merchandise in the logical places and the logical sizes and at the logical prices, before it determines on package design. Shape, size and appearance must carry out the necessities of merchandising objectives. The copy on the package and the use of the package in radio and printed advertising, in sampling and in display, will conform to the plan in which all these promotional elements are unified.

At this stage the thinking concerning the necessities and objectives of the package has brought it to a point where the designer can begin to *create* the package. To approach the problem with the idea of designing a package first and working it into the business later, because the appearance of the package seems attractive to the executives, is to function backwards. Every experienced designer insists upon knowing what the job of the package is, how it will be produced and handled and into what sales plan it fits, before he touches pencil to paper. To design a package without knowing what it must do is a dangerous waste of time. For this reason the fairly common practice of manufacturers who ask designers to "work up an attractive sketch" makes no sense whatever. It is designing in a vacuum.

Creating the Design: When the price limit is known, the possible materials chosen and the merchandising plan established, the designer can begin his work. His first step is to draw up the specifications of

Size and Shape: The package is always an object in three dimensions. It has something inside it; weighs a certain amount. It must be packed and shipped and stacked and handled. It runs a constant risk of being torn or dented or soiled. The designer establishes a cubic size and gives this size a practical and economical shape. His next consideration is

Convenience: We have machines to close packages and trained operators to manipulate them. But packages are opened by *amateurs*. The housewife has only her two hands. She should be able to open the package and, if necessary, reclose it easily, cleanly and quickly. This is, unfortunately, not the case in literally thousands of packages now on the market. One of the designer's objectives, therefore, is always to make the package as convenient as his materials, cost and ingenuity will permit.

Liquids should pour according to the necessities of their use; foods or cleansing creams should be removable from their containers without waste. If an applicator is needed, the best possible construction should be developed. No available improvement in convenience should be neglected, because a more thoughtful competitor may at any time incorporate it in his package. This is why the designer must devote careful thought and all the ingenuity he can command to giving the maximum convenience to the package. At this stage the elements of the package as an object and its functions as a container have been determined. It remains to give the package its

Decoration: The decoration of the package can always be reduced to the fundamental order of the elements of the design. Bands, circles, panels, etc., frequently form the basic plan of the decoration. The name, trade mark, copy panels and decorative devices of various sorts, are the contributory design elements and take their respective places *in the order of their importance* within the basic frame of the design, which we can term the

Layout: The scheme of the package decoration must have a certain balance through all its parts. It should take advantage of the third dimensional nature of the object. A band, for instance, will lead the eye from one flat surface into another plane and enhance the impression of bulk in the package. The layout establishes the order of the entire design treatment and it is this order which makes the package a unified whole. We get a distinct and clear impression rapidly and tend to *remember the package whose design is well organized*, well laid out. The layout determines the spacing and placing of the

Copy: The package should state in words the essential facts of its name, use, chief appeals,

possible merits of the product it contains. In many cases it may also sell related products in the manufacturer's line. It can carry out some of the functions of an advertisement, but the decision as to what copy is appropriate to the package and what is the order of importance of the various parts of this copy story, must be decided individually for each package design.

On the market today, there are many packages whose copy could be effectively re-written. In a large number of instances it could be cut by half, or more, and improved. No matter what space on the package is available, it is a mistake to crowd it beyond the consumer's incentive to read. It is a far greater mistake to devote valuable space to copy which is non-essential and confusing. In many instances the cost of the package is as great or greater than the actual manufacturing cost of the merchandise contained. Since the manufacturer is paying relatively so much for his package, he should utilize the greatest care and the utmost efficiency on the surface of that package, to sell his product and to enable his customers to get the maximum use from their purchase of his merchandise.

A most effective means of accomplishing this without adding to his cost is by writing his copy effectively and then placing it on his package with great care and discrimination. Many packages today are not carrying a complete, clear and effective copy story in the space that is available. The trend is to utilize the display face of the package to get attention and make a favorable impression *at a distance*. The entire rear face of the package can then be used to tell the story of the product and its use. This panel is designed *to be read with the package in the hand*. Thus the essential organization of the majority of the package is one side—the display face to carry at a distance, like a poster, while the copy side, with possibly the ends and lateral sides, tells a more complete and detailed story upon close inspection.

Color Scheme: The science of color is one thing and the psychology of color is another. Colors can be measured and classified scientifically, which is of great value technically. Humanly, however, we each have different reactions to colors. The safest procedure, as far as the package is concerned, is to get a broad and typical reaction to the color scheme. One technique for choosing the final color scheme is to have the package made up in several different colors and to get a consumer opinion either from a typical group or from an actual sales test in a store. The opposite technique is to consult a color expert or designer who has specified colors for years.

Certain general considerations should not be neglected. The dominating color of competitors' packages may serve to simplify the problem. Food products will naturally use appetizing colors; packages which go into the home wisely refrain from too garish and crude a color treatment, as this is offensive to many women. Display packages and display containers in general may be permitted them to use greater liberty, since their prime object is to attract attention in the store. One of the soundest aids is to take the package design in dummy form and place it in its logical position on the shelves of typical stores.

The color scheme can serve another important function by distinguishing between similarly packed products with great effectiveness. Various flavors of the same product are immediately identified by using different colors on the package.

In general, a light colored package, free from restricting panels, gives a larger appearance than a dark package. The recent trend toward transparent cellulose wraps and protective varnishes enables the designer to utilize white backgrounds and lighter and brighter colors without fear of the package's soiling. One rather clear trend today is this tendency to brighten up the store and freshen up the package by employing larger spaces of the lighter shades or white.

Below is a check list of the chief factors affecting package design. If those concerned with the design of a package will take the trouble to fill in the blank spaces, they will have organized the design problem very much as the independent professional designer approaches it.

CONVENIENT CHECK LIST OF FACTORS GOVERNING PACKAGE DESIGN

Product:

Where Sold: Nationally....; or Section.....
Type of Stores: Grocery....; Drug....; Hardware....; Specialty....; 10c....; Dept.....; Chain....;
Type of Display: Shelf....; High....; Low....; Counter....; open....; under glass....; Window.....

Who Buys: Women.... Men.... Children....
Old.... Young....Special Markets....

Why: Appeal: (as beauty, health, appetite, price, etc.)
Primary.....
Others.....
.....
.....
.....

What price by Sizes:
Largest Selling....; Next....; Next....; Next....

Suggestions:
Objections to present packages.....

Change Desired: Complete.....
Moderate.....
Conservative.....

Production Data:
Approximate Annual Quantities.....
Preferred Sources of Supply.....
Maximum Package Cost Item Can Stand.....
Handling in Plant..Full Automatic..... Machines
Semi Automatic.... .....
Hand Automatic.... .....

HOW TO USE TYPE ON YOUR PACKAGES

by Egmont Arens

IN selecting a type face for a package the first thing that the designer ought to do is to ask his client: "What do you want this type to do? Do you want it to be very fast-reading and have great legibility? Do you want it to be read a foot away from the eyes, or five feet away from the eyes, or twenty yards away from the eyes?

"Do you want it to have atmosphere? Do you want it to have an American or a foreign look? Do you want it to signify strength or delicacy? Do you want it to appeal to men or to women?"

After obtaining the answers to these questions and a lot more, you are ready to begin picking your type. Of course it is impossible to lift the problem of type entirely away from the problem of color, because the color of the background largely determines the characteristics of the type selected for easy reading. For instance, a very delicate lettering, like Futura Light or Stymie Light, is easily read when printed black on a white background. It becomes increasingly hard to read as the background is darkened. The same lettering printed white on a black background (or any other dark value color) will be very difficult to read, and the medium or bold face lettering should be substituted in such a case.

All other things being equal, the fastest reading type does the best job under modern merchandising conditions, where there is a great deal of competition of adjoining packages. No package should ever be put into production until it has been determined in actual experiment that the typography can stand up against competing packages. A good way to test this is to stand your package up on a shelf with half a dozen of the competing brands and ask several people to come into the room, look at the packages for five seconds, and then walk out and write down the names of the brands that they saw. If they write down the name of your package first, you may be sure that it is the fastest reading of the lot. That is why, except in special cases, types with the thick and thin lines, such as Bodoni, Goudy, etc., are not suitable for packages. They are too slow reading at a distance.

The tendency toward simplicity in packages—especially in their typography—which was advocated a few years ago by myself and a number of other typographers, has now become a general fashion; so much so, indeed, that any one who puts out a complicated looking label is left at the post in the race for consumer acceptance. What I like to call the "stream-lined" types, the *sans serif*, such as the Bernhard Gothics of the American Type Founders Company, the Futura of the Bauer Type Foundry, the Kabel of the Continental Typefounders Association, are still going strong in the up-to-date typography. These have been used so much, however, that recently there is a tendency to reach out for a little variety. However, the *sans serif* types are still excellent for use on the backs and sides of packages for directions and blurbs about the product. For this purpose, when printing a dark type on a light background the medium weights are best; and when printing in reverse—that is, white on black—the light faces should be avoided. This is because when the label is actually in production on the printing press, too fine a white line is liable to fill up with ink.

In the endeavor to get away from the strictly *sans serif* types some interesting new faces have become popular favorites, such as the Girder types (Continental), the Stymie types (American) and the Beton (Bauer). The Girder was inspired by, and named after, the steel I-beam. It adds a certain amount of eye-interest to the fast-reading qualities of the *sans serif* types.

The most interesting development of typographical fashion in recent years has been the return to the fashions of the gay nineties. The result has been the unearthing of a number of tremendously interesting types which have a naive and old-fashioned look to them, but which, when introduced into modern practice, discovered themselves as being very effective for present-day usage. For instance, the American Type Founders have resurrected some quaint old-time Victorian type faces, such as the amusingly renamed "P. T. Barnum," "Gold Rush," "Jim Crow." Some of these might be used very effectively on modern packages.

Another interesting resurrection is the condensed Gothic, which makes it possible to print longer words in short lines. The American Type Founders' Raleigh is a case in point. This type has been modernized by the addition of additional characters, such as the A, K, M, N, S, which make it effective in modern display. Another type face which has a decidedly mid-McKinley atmosphere is the Continental Typefounders' "Ortleb." This is a shaded Gothic which, if used with discretion, ought to have very interesting possibilities on a package.

There is a certain type of package which endeavors not so much to attract attention from a distance, but which is designed to be smart and appealing when held in the hand. Under this heading come most of the cosmetics and other items of particular appeal to women. For such packages types of the Bodoni family are very well suited. If given plenty

The packages in this group have been selected to demonstrate effective use of typography. They divide themselves roughly into four groups:

1. Those using sans serif (Futura) type. Under this heading come Kerfs, Alba Tonic Salts, Nivea Creme, Tick, Van Camp Tomato Juice.

2. Those using the condensed gothics which have lately become the vogue: Manischewitz Matzos, Bakes-All, Renulac, Del Ray Soup, Tripes, Budge-it Cleaner.

3. Those using Bodoni type with script. Very smart effects are possible with the use of this combination, as demonstrated by several packages of the Macy line, Quinlan Cream and Carter's Ink.

4. Those using a new type of lettering which has very recently come into fashion, its characteristics being the round-topped A, M, N, the condensed S, etc., as in the special characters that may be bought with American Type Founders' Raleigh type face. This lettering style, which approximates hand lettering, is well demonstrated by Dr. West's Toothpaste, Huyler's Ice Cream, Couettes, Sultana Baking Powder and Bokar Coffee.

Package selection by Egmont Arens.

of white space around them, the letters, with their alternating bold strokes and delicate lines, give a smart, well-groomed appearance that is at once chic and fashionable.

A word should be said about the types which undertake to imitate hand lettering and script. As a rule such types are not desirable because it is impossible to translate the freedom of script to type. However, the script types of Bernhard, produced by the Bauer Type Foundry, are still very good style. The most beautiful new type in this category is the "Trafton" script, also produced by Bauer. It is a type of great distinction, but will no doubt be copied so extensively in the next year that it will probably wear itself out. A script type is not a fast reading type, and therefore should be used very sparingly on packages. It has a definite use, however, where used in contrast to the bold faces.

A few "don'ts" for package typography might be in place here:

Don't use fussy type faces. Insist on legibility.

Don't use "bastard" type faces. Under this category come the many pirated copies of some original type design that becomes popular. In nine cases out of ten the original designer is better than his imitators.

Don't overload the front of your package with type. Rule out everything that is not absolutely necessary. You will be surprised how little you really need.

Don't crowd your type. Type, like a living being, cannot do its work without air.

DEVELOPMENT AND APPLICATION OF COLOR

by Carl E. Foss

THROUGHOUT history man has sought to capture and utilize the colors of nature. Even the men of the Stone Age felt the urge to make a record in color of what they saw and decorated the walls of their caves, 'though their materials were but colored earths.' In the course of time the ingenuity of artists and craftsmen demanded brighter and more varied colors. These were obtained by the use of certain natural dyes. Indigo was secured from a plant in Asia; alizarine from the roots of madder, a plant known to the ancient Egyptians; carmine from the insect, cochineal, found in Mexico. Pigments were made from ores, ultramarine was produced by pulverizing the semi-precious stone, lapis lazuli.

But progress was slow—century after century often passed without the discovery of a single new pigment or dye. At certain periods great painters developed secret color formulas which they guarded carefully. Until the middle of the nineteenth century relatively few synthetic colors had been made, when after some startling discoveries the young science of color chemistry grew faster and faster. What seemed impossible one day became a reality the next. At the present time, chemists are adding artificially produced colors at a rate that would astound their predecessors.

Up to the last century the artist or craftsman needed but little knowledge of color chemistry. He was of necessity his own technologist and limited to the use of color materials existing in nature. Now the field has broadened so widely that he must understand something of the composition of colors, to know their possibilities and limitations.

A number of chemical compounds are found, each with its distinctive color due to the color-producing characteristics of one of its components. For instance, the presence of chromium in a compound always produces a color—usually orange, yellow or green. Iron in a compound also produces color. In other chemical compounds, color is produced by the peculiar structural arrangement of the components within the molecule. When viewed separately as elements, these components may be entirely colorless. The majority of modern colors are of this type and are built around the element, carbon. Over 2000 such color compounds are in constant use although a vastly greater number are known. On the other hand, hardly more than 100 colored materials derived from any of the other elements are used. These non-carbon materials are called inorganic, in contradistinction to the organic or carbon-containing compounds.

Chemists discovered that carbon-hydrogen compounds with a high proportion of carbon in the structure of the molecule provided the best basic materials for the production of organic colors. Such compounds are found in abundance in coal and are liberated by a distillation process. After purification, these compounds, although colorless liquids and solids, are changed chemically so that certain peculiar components, called chromophores, are introduced into the structure of the molecule.

With the addition of suitable chromophores in the basic structure there still remains the necessity of adding one other component before the compound will have its full color potential. This component is called an auxochrome, and gives the total compound its final characteristic as a dye or pigment.

Even though the principle underlying coloration is

always the same, the added color producing components are often of a different and more complicated nature. After a certain color has been produced by such major steps, it is possible to alter its hue by minute chemical changes.

We have seen how the chemist produces certain color structures, using atoms as building blocks, and how he produces new colors by apparently slight changes. Although such changes appear simple in the diagrammatic representation of the molecule, in practice they may be possible only after extensive research. To put the chemical structural plans into practice, the chemist must first of all take them to the laboratory and, step by step, patiently build and join together his groups of atoms until the planned compound is achieved. Then by further and equally patient steps, a smooth, large scale factory production has to be worked out. Sometimes the ingenuity of the chemist can bring commercially practical results only after a tremendous investment in plant equipment.

Even now we have not reached the end of our story of the making of modern colors. So far we have only produced the coloring agent—the dye or the pigment. This is nothing but a powder which, if soluble, is called a dye, if insoluble, a pigment. The chemist must do more before this powder can be used, before it can be spread on and made to adhere to thousands of different types of materials, where it must withstand the gruelling test of rigorous and active service.

The first essential for the successful application of the coloring agent is the vehicle, or medium. The vehicle holds the finely ground colored powder in suspension and permits its application in uniform densities to the objects to be colored. For the dyer, the vehicle may be water; for the printer of silks, a gum solution; for the maker of lacquers, guncotton, resin or solvent; for the painter, oil; for the printer, varnish. It may be applied by means of a roller, brush or spray gun or by dipping the object in a solution of the coloring matter. Almost every kind of product to be colored has its own peculiar problems of application, involving the nature of the material, temperatures to which the finished product is to be subjected, nature of the drying process, the necessity for frequent cleaning, resistance to abrasion and to the devastating effects of sunlight and chemicals.

Now that we have color applied in any one of the many possible ways, it is necessary that we consider what happens when light falls on the sample. All materials are said to be colored because they absorb light of various wave lengths in various amounts. This phenomena is called selective absorption. The exact behavior of any sample can be determined quantitatively by means of an instrument called a spectrophotometer and can be expressed by a graph indicating the amount of absorption of light of all wave lengths.

Although a spectrophotometric curve is the most precise description of a colored material, it is only one factor in the visual judgment of a color, which depends upon many factors, such as the character of the illuminant, the sensitivity of our eyes and various other viewing conditions. It is therefore impossible to establish a correspondence between the physical characteristics of a color and the sensation that it evokes unless a standard set of viewing conditions is adopted. This is now possible since international agreement has been reached regarding specifications for a standard source of white light and the characteristics of the normal eye.

With consideration of these specifications, a spectrophotometric curve may be reduced to three figures which express the amount of excitation of three hypothetical mechanisms in the eye. As it is not a simple matter to visualize colors in terms of these numbers, a slightly different expression is preferable. By a mere graphical transformation of the three figures, a color may be expressed as having a certain dominant wave length, brightness and purity. These three parameters closely resemble the attributes of color, hue, value and chroma.

It is quite possible for two colors which are described by different spectral reflectance curves to have the same tristimulus values, and therefore the same dominant wave length, brightness and purity. This means that although the two colors are different physically, they will appear to match under the specified illumination. In general such materials will no longer appear to match if the illumination is altered. On the other hand, if they match physically as indicated by identical reflectance curves, they will always match, under any conditions. In the matching of colors, therefore, it is obviously necessary to select the type of match that is required by the nature of the problem.

The physical aspect of color is to be emphasized for the reason that the sensation under any specified conditions can be computed from the physical specifications, whereas the converse procedure is not possible. While the specification of the sensation is quite sufficient for the solution of many color problems, it is inadequate for the maintenance of color standards or for problems of color mixture.

The application of chemistry to color problems has resulted in an ever increasing wealth of materials with which the user of color has superbly developed the arts. Progress has been somewhat retarded by a lack of complete understanding between the chemist and the artist. They have not always spoken the same language. The application of physics to the study of color is still in its infancy, but already it promises a color language upon which both the chemist and the user of color can agree. With the general adoption of such a language we may expect the elimination of ambiguity in color terminology, a freer interchange of color knowledge and a more effective use of color.

ADHESIVES IN PACKAGING OPERATIONS

by D. V. Williamson

IN the development of modern packaging, adhesives play an important part. Their work is done in such a silent and prosaic manner, however, that frequently they do not receive the attention to which their important function really entitles them.

Consider some of the packaging operations of today where adhesives are used:

Manufacture of set-up paper boxes.
Gluing of folded paper boxes.
Sealing of individual cartons after they are filled with goods.
Wrapping of individual cartons with printed paper labels or transparent cellulose wraps.
Wrapping of products directly with transparent cellulose wraps and sealing them.
Forming window box cartons with transparent cellulose sheets.
Tight wrapping of cartons with printed paper labels.
Labeling of bottles.
Labeling of cans.
Manufacture of paper tubes and cans.
Manufacture of fibre shipping drums.
Manufacture of bags using plain or waxed paper or transparent cellulose sheets, plain or moistureproof.
Sealing of fibre and corrugated shipping cases.

All of these packaging operations are performed on highly specialized machines which operate, in many cases, with truly remarkable speeds. On these machine operations, the adhesives used must not only have the property of making satisfactory seals and bonds with the papers, boards or other packaging materials used but they must also function properly on the machines under continuous operation and with an absolute minimum of operating trouble.

On machine packaging operations, these two essentials—ability to make suitable adhesive joints and ability to function properly on the machines—are equally important. The adhesive manufacturer, therefore, should have all essential information before he is asked to prescribe the proper adhesive.

When consideration is given to the multitude of products that are used for packaging today, and in conjunction with which adhesives are used, it will be realized that the selection of suitable adhesives for the particular operation in mind is important. For instance, an adhesive suitable for machine bottle labeling is useless for shipping case sealing. Can labeling adhesives are specialties for that particular purpose only. The same thing is true for adhesives for transparent cellulose sheets, foil, waxed paper, glassine and dozens and dozens of other materials.

Adhesion, primarily, is a matter of surfaces. If an adhesive is not chemically attracted to the surfaces it is to join together it is useless for that operation. There is no such thing as strength in an adhesive unless the surfaces to be glued together are included in the thought. For instance, an animal glue which makes a joint in a piece of furniture that is actually stronger than the wood itself cannot hold a spot label on a tin can twenty-four hours. The label would drop off when the glue dried because the surface of the tin repulses animal glue instead of attracting it, and all of the dried glue would be found on the label which fell off the can.

A generation ago the only kind of glue in general use was animal glue. This product is made largely from the hides and bones of animals and is an exceedingly useful commodity in many lines of industry. It has, however, some inherent characteristics which make it of limited value in modern packaging. Among these may be mentioned the fact that it can be used only when heated and that it has a more or less objectionable odor.

In the last fifteen or twenty years there has been a great advance in the technology of an entirely different class of adhesives often referred to as vegetable glues since they are derived from vegetable rather than animal sources; chiefly from corn and tapioca. These products can be used cold and are odorless, and the vast majority of the labeling and sealing operations on packaging machinery are performed by such adhesives. When used with most kinds of paper or boxboard they develop a strength of joint in excess of the strength of the materials they join together. They possess, moreover, many other desirable properties for machine operation.

Most of the adhesives for packaging operations are shipped by the adhesive manufacturers in prepared form ready to use, either as liquid glues or heavy bodied pastes, which products do not deteriorate with age. There are sold, however, products known as dry cold water soluble glues. These products are shipped dry and prepared for use by the packaging manufacturer by adding cold water, mixing properly and then waiting for the necessary chemical actions to take place. Properly handled, and in some operations, they give good results.

The danger, however, lies in careless preparation, improper measurement of quantities, insufficient time allowed for the necessary chemical actions—all factors which experience has shown tend to produce unsatisfactory and non-uniform results. Moreover, such products, in many cases, must be used up in a day or so or they will start to deteriorate on standing. Again, it is a chemical impossibility for the adhesive manufacturer to incorporate in such dry

products all of the materials that he can in liquid products and many ingredients are used in manufacturing prepared liquid adhesives which give the resulting products properties impossible in the dry products.

In the packaging plant the cost of the very best adhesives is one of the smallest elements of packaging expense, and yet the continuous and proper functioning of the adhesive is really an important matter. So, instead of a packaging manufacturer feeling that he is saving freight in purchasing dry cold water soluble glues, the suggestion is offered that when he buys prepared adhesives made exactly to meet his particular requirements, he is then paying freight on satisfaction.

ADHESIVES FOR TRANSPARENT CELLULOSE

Transparent cellulose wrappings are now being employed in practically every phase of packaging, and with them there has developed an insistent demand for suitable adhesives to use with them. To meet this demand has not been easy because of the many variables and difficulties present.

With plain cellulose sheets careful chemical balance must be present in the adhesive used as otherwise the adhesive will attack the sheet and embrittle and weaken it. Excessive puckering of the sheet at the glued joint is another item that will occur if the adhesive is not designed for its delicate purpose.

There is an important difference between the gluing of paper and boxboard to itself and the gluing of plain cellulose sheets to themselves. With the paper and boxboard thin films of adhesives are desirable; with the latter, thick adhesive films give stronger joints.

It makes a difference, from an adhesive standpoint, whether the operation is that of joining the plain transparent cellulose sheets to themselves, or to paper or to boxboard. An adhesive that gives the best results in the first instance may not also properly perform in the latter case.

Adhesives have sometimes been blamed in the case of window boxes made with plain transparent cellulose sheets because of subsequent warping and twisting of the boxes. The cause of this trouble does not lie in the adhesive. It is found in the hygroscopic nature of the sheets themselves. They take on moisture from the air in humid weather and expand, and in dry weather they give off moisture to the air and contract.

With moistureproof cellulose sheets other difficulties arise. These sheets are made of the plain cellulose material coated on both sides with a very thin layer of moistureproof material and the nature of this coating is such that adhesives designed for the plain sheets offer no adhesion whatever on the moistureproof surfaces.

It is possible to use solvent types of adhesives which soften this moistureproof coating and give some adhesion when heated metal plates are pressed down on the glued joint while the film is thus softened. The resulting strength of joint is necessarily rather weak, however, because it is only the outer moistureproof layers that are joined together and the thickness of this layer is but .0001 in.—about one-tenth as thick as tissue paper.

Much stronger joints are possible, however, with adhesives which will penetrate the outer moistureproof layer and take hold of the plain cellulose sheet inside. These adhesives are of such nature that, while they may be applied properly with rolls on machines, they are not suitable for capillary wick action (as is possible with solvent type adhesives) and this is a point for machine manufacturers to bear in mind when designing machines to seal moistureproof cellulose sheets where really strong and reliable joints are desired—as on larger packages which may have to stand up for some months of time and in various climates.

One of the most troublesome difficulties with adhesives for moistureproof cellulose sheets is to produce sufficient initial tack. With few exceptions adhesives for the moistureproof sheets do not offer as quick initial tack as is possible with the plain sheets, or with paper or boxboard. This deficiency in initial tack is cleverly offset in the design of some machines by causing the freshly glued joint to pass electrically heated hot plates, thus immediately enhancing the tackiness. Proper adhesives yield fast production with this method.

Here again, with moistureproof sheets, it makes a great difference as to whether the operation is to join the sheets to themselves or to paper or to board. Some adhesives, which will join the sheets together, have no utility whatever in joining a sheet of paper. It is possible, however, in using the proper adhesive to join the moistureproof cellulose sheets to themselves or to paper or to board, or to waxed board. Incidentally, the moistureproof sheets are not hygroscopic and hence window boxes or envelopes made with them do not warp. They stay flat regardless of weather conditions.

Cellulose acetate sheets are very different, from an adhesive standpoint, from plain cellulose sheets. Different adhesives are needed, but satisfactory ones are available which give excellent results. Here again, however, when these sheets have moistureproof coatings, different adhesives are required.

Some other considerations that offer peculiar difficulties with adhesives for the moistureproof sheets are odor, color and non-stringing characteristics. Satisfactory adhesive results with the moistureproof sheets are being obtained, however, in widely divergent industries and meanwhile constant research is producing better and better adhesives.

Adhesive operations are so diverse in modern packaging methods that there is no such thing as one best glue, any more than, for example, in industry, there is one best paint. There is probably one best

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kind of paint for any particular operation; similarly with adhesives. This article is concluded by listing the more important characteristics which users of adhesives must consider. For some operations one or several of these items are of prime importance; the "best" adhesive for any particular operation is that one with the best balance of all the factors necessary for that operation.

Chemical attraction (not repulsion) to the surfaces to be glued together. Without this essential, adhesion cannot be secured.

Initial tack is usually more important than quick set because if an adhesive has initial tack sufficient to hold a seal down at once and keep it down the time interval for ultimate setting is relatively unimportant.

Quick set is important where the package is subject to stress as soon as it leaves the gluing machine, as is often the case with fibre or corrugated shipping cases.

Property of being used without heat.

Freedom from odor is important with food or other products susceptible to odor absorption.

Non-stringing characteristics are particularly important on a reciprocating type of machine which carries glue from a roller over to the package. On "straight line gluing" as on carton-forming machines this is relatively less important.

Property of increasing the tackiness and hastening the set by application of heated plates to the glued joint.

Non-foaming characteristics are important details on high speed machines.

Proper viscosity. Various machine requirements run from adhesives as free flowing as water to heavy bodied pastes that will not flow at all.

Color on transparent wrappings is of paramount importance.

Flexibility is sometimes necessary, other times not.

Being neutral in chemical action is necessary to prevent discoloration of printed wrappers and labels, actual deterioration of wrappers or disintegration of metal containers. These conditions sometimes are only noticeable after a considerable time interval.

Permanency of joint. Weather and climatic conditions vary greatly and tend to affect the strength of some joints. A good adhesive will perform its function and make a good bond regardless of such changes.

Waterproof qualities are sometimes very essential.

Keeping qualities. Proper adhesives do not deteriorate with age.

Cost. This last item, in the matter of adhesives, certainly belongs in the last place in any list. If packaging manufacturers paid twice the prevailing prices for adhesives, the cost of this item would still be very small as compared with other items of packaging expense. But an adhesive that fails to perform its function, slows up a production line or stops it altogether, lets packages open up on customers' shelves a thousand miles away and six months after shipment or gradually discolors labels or corrodes tin cans would be a mighty expensive item to the packaging company if it paid nothing a gallon for it.

The manufacture of adhesives is an intricate business and the best policy for the owner or operator of modern, costly, high speed packaging machines is to state his particular problem in all its details to a reliable adhesive manufacturer who can be of real help to him out of his experience and who can supply him regularly, month in, month out, with suitable and uniform products.

TYPES AND APPLICATIONS OF WAXED PAPER

by Edgar A. Clark

TIME was when the wax paper business was a simple affair, so far as equipment and methods were concerned. The rapid growth in the use of wax paper is not more astounding than the improvements in refining—methods of combining wax and paper, and the waxing machine inventions that have made it possible to meet this great demand in so short a time. Savings accruing to industries through the use of wax paper reach many millions of dollars.

In the early stages of manufacture a quantity of unsized or slightly sized paper was placed in a pile and a little wax shavings laid on the topmost sheet. With a hot iron the wax was melted which penetrated the top and second sheets. Then again wax was liquefied in a pan and sheets of paper drawn through it. When larger quantities were in demand, paper in roll form was run through an iron trough containing melted wax, kept in liquid form by gas or oil burners. Mounted in the tank was a glass roll, under which the paper ran; as the paper emerged from the tank, it was run over a steel scraper, then through two squeeze rolls to remove all surplus wax. Then the paper was allowed to loosely fold on itself a short distance away and after several hours was ready to cut into sheets or wind into a roll.

The invention and introduction of waxed paper into the field for food preservation primarily was as important and as revolutionary as the introduction of refrigeration.

From the very simple beginning described, waxed paper has developed into a complicated product so

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that the character of the base papers and the kind of wax used are selected very carefully and scientifically to meet the exact requirements of the product to be packaged. When automatic machines for wrapping were first introduced, papers had to be made to meet the machine requirement, for instance the first kiss wrapping machine found no paper with sufficient twisting strength in a reasonable weight that wrapped without a very big waste through torn wrappers. As other machines for wrapping various products were invented, intensive laboratory work developed papers to fully meet the requirement.

In addition to paper requirements there was the proper wax content to consider and the best method of application to meet the many different needs. The reason for the extraordinary growth of waxed paper is not hard to find. Its appearance is attractive, excellent color, high gloss, waterproof and resistant to water vapor to a high degree.

In common use we speak of waxed paper in three classes, although there are many sub-divisions of the three classes. For practical consideration they are as follows:

Dry Waxed Sulphite: Impregnated with paraffine of a relatively low melting point. Carries little or no surface wax and is dry to the touch. Not entirely proof against water, vapor and air. Such a wrapper is a protection against contamination by handling or contact and, to a moderate degree, against changes in moisture content. Is not self-sealing on application of heat. Its use is indicated in many special instances.

Semi Dry Waxed: Here the wax is driven into the fibres of the sheet and there is also a slight surface coating. Often used in delicatessen, meat and grocery shops and in industries not related to foods.

Waxed Sulphite: A heavier coating of paraffine with correspondingly greater resistance to the passage of air and of water vapor. It is self-sealing on application of heat. Used as a wrapper for many products, but especially useful as a liner or divider in package goods.

Waxed Glassine: Is lightly and also heavily coated with paraffine, usually of high melting point and like waxed sulphite is odor-proof, insect-proof, etc. Waxed glassine is also made in an endless variety of grades and weights.

Waxed paper completely changed the bread industry, because it was found bread sealed in waxed paper could be baked in central bakeries and distributed *"oven fresh"* throughout large areas. Not that any wax paper would allow this, but the proper weight base stock and the correct amount of wax coating allowed the bread to breathe—for yeast in bread does not entirely stop acting after the bread is baked. In good bread there is a secondary yeast action which results in giving off certain gases and moisture content which, if confined, hastens the formation of mold and chemical reactions.

Waxed paper that allows bread to breathe is of great value; it duplicates nature, in that it has the properties of the natural outer coverings of some fruits. While it is possible to make a waxed paper resistant to moisture, the fact that paper can be waxed to allow moisture to pass through is a highly valuable property.

Waxed paper has been exceptionally valuable in the baking industry; it is also equally valuable in the confectionery, soap, florist, tobacco, medical and many other lines.

With the introduction of electric refrigeration, which is a dry cold, wax paper is more and more used to prevent loss of moisture due to the cold dry temperature of electric refrigeration. Electric refrigeration in conjunction with waxed paper gives nearly perfect preservation, also preventing flavor contamination from foods in the ice chest and excluding all injurious atmospheric influences.

The development of opaque waxed paper is the most important progression that has occurred in recent years and it deserves attention from all who package. Opaqueness has enhanced the advertising value of waxed paper and especially is this true when the paper has been coated with colored pigments and then waxed. Such papers have a definite purity of hue and brightness, and offer a brilliant contrast to printed matter.

The value of appearance depends upon the physiological laws governing sight. The value of waxed paper is not alone in its eye-appeal, but also its preservation qualities, keeping out contaminating odors, outside influences, etc. Originally conceived to keep foods fresh longer, new uses for it are extending into many industries.

Research has shown that opaque waxed papers, that immediately became popular through their superior appearance, are effective in retarding harmful changes in many products accruing from light rays. In other words, opaque waxed paper is penetrated less by light rays than ordinary waxed paper or a white transparent paper and that colored opaque waxed papers are considerably superior to white opaque waxed papers.

Just as colored glass bottles are a protection from light rays, opaque waxed papers, especially if colored, advantageously replace ordinary waxed papers or transparent materials in packaging products that may turn rancid, lose flavor or color or otherwise be affected by exposure to light. Waxed paper is also made transparent, when it is desirable that the printed matter on the container be clearly visible.

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GENUINE VEGETABLE PARCHMENT

THERE are essentially two kinds of parchment, animal and vegetable. Animal parchment is the prepared skin of animals, usually sheep, and has been used for centuries chiefly for documentary purposes. Vegetable parchment, as the name would imply, is of vegetable origin and derives its name from its resemblance both in appearance and characteristics to the original animal parchment. Genuine vegetable parchment is a double process sheet, the first process being much the same as is employed in the manufacture of other papers except that no sizing or other foreign matters are added.

This first process results in a pure, soft, white, loosely formed web of pure cellulose fibre. It is then subjected to a chemical treatment which instantly changes the character of the product and produces a sheet that is odorless and tasteless, wet or dry; is highly resistant to penetration by fats or oils; snow white in color, and retains the strength and protective quality even when thoroughly soaked with water. Genuine vegetable parchment may be boiled for hours in water without in any way harming the sheet, causing it to pulp, weaken or go to pieces. It is obvious that these unusual protective qualities make this sheet the ideal protection for any moist or oily food products.

Genuine vegetable parchment has been used for the protection of foods for a quarter of a century. Chief among the users are:

Meat Packers. Fresh meats, such as pork loins, beef tenderloins, pork sausage, etc., need protective wrappings that will not disintegrate in contact with the meat juices. Genuine vegetable parchment is "stronger wet than dry," is not completely airproof, and is the ideal wrapper for these products. Smoked meats and cooked hams are wrapped in genuine vegetable parchment, not only because it is snowy white in color, but because it is grease-resistant. Being soft, pliable, and strong, parchment does a "better job of wrapping." Lard and shortenings in cartons or boxes are protected in genuine vegetable parchment to avoid grease leaking through the container. It folds without breaking at the corners and is highly satisfactory, as evidenced by the fact of its having been used for years for these products.

Crinkled genuine vegetable parchment is a sheet of parchment which has been creped or crinkled, to increase its strength. Among its uses in the packing house are as liners for boiled ham retainers, the users claiming that a better yield is obtained, there is less labor of cleaning the molds and that the molds do not have to be re-tinned so frequently as they do not pit quite so badly. Crinkled parchment is daily becoming more popular for use in wrapping of tamales, replacing the unsanitary corn husks. Condiments used in the manufacturing of tamales give the crinkled parchment a beautiful golden color after the tamales are cooked, for they are cooked right in the parchment. With tamales and on the cooked hams, the fact that the product is cooked in its own juice in a pure sheet of genuine vegetable parchment, improves the flavor, and on boiled ham also the texture and slicing qualities.

A further use for crinkled parchment is in the lining of burlap bags, used for shipment of dry salt meats and frozen specialties like tongues. The paper is glued to the bag, and export shipments to the Smithfield Market in London are continually being made in parchment lined burlap bags. Some years ago one of the meat packers tried a sheet 24 in. × 24 in. of crinkled parchment, over the head of his slack barrels of meat and fastened in with the burlap covers, for shipment of fresh pork trimmings to his branches. Previously they had used a sheet of pork loin paper, laid on top of the trimmings to protect the product from dirt and dust seeping through the burlap, but with unsatisfactory results. When the trimmings, packed in the crinkled parchment covered barrels, arrived at the branch house, the manager wrote back to the plant that the trimmings had a better bloom than any he had received previously, that thirty pounds extra had been packed in the barrel, that there was no dust or dirt on his trimmings to be trimmed off in the sausage room, nor any pieces of paper to be picked out of the trimmings and that his trimmings were free from gas. The result of this report was the adoption by this packer and others of crinkled parchment covers in conjunction with the burlap over the heads of their slack or sugar barrels, of not only trimmings but all fresh meats, offal and sweet pickled meats.

Parchment finds a still further use in the packing house in connection with the back packing of sweet pickled meats. These meats are taken out of the vats and re-packed into used lard tierces for storage in the freezer until such time as they are needed in the smoke house or the boiled ham department. To keep the meat clean and free from dirt and rust that would fall in when the head hoop at the head of the tierce was removed, a muslin sack was used, and, while the sack had a re-use of about twice over, it was still a costly item of supply.

An enterprising packer tried one sheet of crinkled parchment 24 in. × 24 in. at the bottom of the empty tierce, then packed his meat and fastened a second sheet of the same size of crinkled parchment in with the head of the tierce, pickled his meat and put the tierces in the freezer. These two sheets of crinkled parchment gave this packer all the protection he needed, and saved him a lot of money, not only in labor of handling, but in cost of supply.

Fish Packers. The fishing industry uses genuine vegetable parchment for fresh, frozen and smoked

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fish. The reason is obvious, for there is need for a sheet that will stand moisture, brine and salt and is oil and grease resistant, and genuine vegetable parchment fully meets those specifications. Some of the packers use parchment waxed on one or two sides, for frozen fillets, because of the better insulating value and the fact that the waxed surface prevents the paper from sticking to the fish during freezing and in transit.

Poultry Packers: The poultry packer uses genuine vegetable parchment because it makes him money on his birds; for genuine vegetable parchment will definitely prevent freezer burn, discolorations and bruises, any one of which will make the packer take a discount of $^1/_2$ to 2 cents per pound. The reason is that genuine vegetable parchment absorbs the moisture from the body and the viscera drawn out of the birds during freezing, thus preventing the formation of ice particles on the skin. The poultry packer not only uses genuine vegetable parchment to wrap each bird, but he lines his boxes with the same sheet. The fact that he wraps each bird in parchment enables him to pack both white and yellow birds in the same box, with a material saving in labor.

The poultry packer also finds a use for crinkled parchment, not only as divider sheets in his barrels, but as liners and covers for his barrels. The corrugations in the sheet act as a sort of cushion, and one poultry packer boasts that he sends his birds to market "riding on a cushion." The new idea in shipping of turkeys is in crates or boxes instead of barrels, and crinkled parchment is used to line these boxes so as to avoid bruises in transit. The birds of course are individually wrapped with the regular genuine vegetable parchment, not crinkled.

Lard and Shortening Manufacturers: This industry uses genuine vegetable parchment in a number of ways. The first use is for liners and circles on tubs and tins. Then when the cartons came into use, genuine vegetable parchment in sheets for Peters style cartons, or made into bags for end opening cartons, is the universal package liner. And it is equally successful in the newer package idea of shipping fifty pounds in wood or fiber boxes, lined with parchment. The whiteness of the paper blends well with the color of the lard or shortening, and its extra softness allows folding without breaks at the corners and resultant grease penetration.

Dairy Industry: Butter has been wrapped in genuine vegetable parchment for many years, and there is no other sheet on the market that will fully protect and deliver the product to the refrigerator in the home as well as parchment. It resists the moisture and salt, and the freedom from odor or taste places it at the top of the list for butter protection. And it protects enemies from without as well as from within, for parchment will keep foreign odors away from the butter. It is used as wrappers for prints and rolls, and as liners and circles for tubs and tierces. Up-to-date creameries usually boil the sheets of parchment in water or brine to kill any mold spores that may have formed while the paper is in storage at the creamery. The housewife is thoroughly aware of the protective qualities of parchment, for she keeps the butter in its parchment wrapper in her refrigerator until entirely used.

Ice cream wrapped in genuine vegetable parchment is fully protected from contamination. No shreds of paper to pull off, for parchment just won't go to pieces when it's wet. And the delicate snow-white color is typical of the delicately flavored, 100 per cent American product within. The new idea adopted by Borden, of having the little individual cubes or cones of ice cream for sodas, includes the wrapping of the individual portions in genuine vegetable parchment.

Milk cans are protected from dust and dirt and spillage, by gaskets or squares of genuine vegetable parchment. Some cities think so well of this proposition that ordinances are in force to the effect that all cans of milk coming into their cities must have these gaskets of genuine vegetable parchment, or the milk will be refused.

Vegetable Industry: Lettuce, broccoli, celery, spinach and other vegetables, shipped in a more or less moist condition, are wrapped in genuine vegetable parchment for protection. The crates or boxes in which they are shipped are lined with parchment to hold the contents in prime condition. The housewife recognizes parchment for vegetables, for she makes little sacks of parchment and uses left-over vegetables, cooked in their parchment sacks. One little sack holds beans, another carrots, another peas and so on. All of them are cooked in the same vessel and the flavor of one is not transferred to the other—a little saving in fuel for the housewife.

Printing: Special inks are used in the printing of genuine vegetable parchment, for the printing must not offset when used on greasy, wet or briny foods. The inks must stand the boiling test, for if you will refer back to the dairy industry, you will find that most of the dairies boil their butter wrappers and liners before they use them. The majority of the wrappers are printed. Printed wrappers are probably one of the best mediums of advertising, for the carton of butter with its printed wrapper enclosing the print, goes right to the home and is looked at many times daily by the one who does most of the buying.

The parchment industry maintains a research department to work out special problems of packaging for their customers, and art departments to assist in the suggestion of special designs for the various items of their business.

TYPES AND USES OF GLASSINE PAPERS

by J. Lloyd Triggs

THE last three years have brought revolutionary changes in the field of glassine papers. New processes have produced natural glassines of great transparency and have given to all glassines a new property of soft, pliable strength. Inasmuch as the average glassine mill and waxing plant produces well over a hundred varying grades of paper, it is simpler to treat glassine from the standpoint of general use.

From this angle most glassine papers fall in four groups: outer wraps, carton liners, bag stocks and special industrial glassines. While varying greatly in appearance, the glassines found in each group possess the common characteristics of high grease resistance, cleanliness and low cost. When waxed, all glassines become decidedly moisture-proof and self-sealing through the application of heat.

In the first division—outer glassine wraps—a high degree of transparency is usually found. The papers in this group are known in the trade as "Super-transparent Bleached Glassines." They are designed to work rapidly on packaging machinery, to print with facility on ordinary presses and to provide a neat, tight seal with ordinary adhesives. As a carton wrap, this group of glassines offers approximately 90 per cent of full transparency.

Although this field for unwaxed glassine has declined in volume recently due to the advent of transparent cellulose, lost tonnage has been more than replaced by the increased use of waxed super-transparent glassine in the baking industry, and by greater use of waxed glassine carton liners to replace waxed papers offering less moisture-protection.

From the standpoint of volume and variety of grades, the second division—carton lining glassine—is of greatest importance. In this group are found both bleached and unbleached glassines, the latter tending toward a light gray or an amber color. While transparency is of little importance, grease and air resistance are kept at a high point and the moisture-proof quality of the waxed liners is particularly developed. Many manufacturers have found it economical to have special glassine liners developed to meet the specific needs of their product and packaging machinery. Aside from these individually produced glassines, the unbleached grades find general use in cracker cartons, coffee bags and in lamination with box-board. The bleached liners are used for cereal, prepared flour, cocoanut, gelatin, candy and an endless number of other products requiring a sift-proof, sanitary, grease-proof or moisture-proof (if waxed) liner of low cost.

In the bag and envelope industries two general types of bleached glassine are prevalent. These are known as "Super-transparent Bleached Glassine" and as "No. 2 Bleached Bag Glassine." In the manufacture of bag glassines, special attention is given to strength and pliability, while transparency varies with the cost of the grade used. The baking industry is perhaps the largest user of glassine bags but the number of other products so packaged—potato chips, grated cheese, collars, novelties, etc.—is legion. Present day bag machinery has kept pace with the rapid developments of the lining and wrapping machine manufacturers and many types of glassine bags can now be made at a speed of 700 per minute. Bag glassines are made to print well with both oil and aniline inks, and the printing of these bags is normally a part of the manufacturing process. By a process of waxing on one side with a dry strip for gluing, a moisture-proof bag is produced. Two lightweight glassines, laminated together with wax, form a special bag paper used where exceptional moisture-protection is of definite advantage.

The fourth division—industrial glassines—must be adopted to cover a multitude of little known but widely used special papers. The pharmaceutical field uses as a bottle wrap a special transparent glassine with a high resistance to breakage when twisted. Ball bearings are wrapped in a special heavyweight amber glassine. Ticker tape projection devices use narrow rolls of a ready-printing transparent glassine.

Many of the papers mentioned above are prepared in special colors and with embossed designs. The colored glassines make economical and attractive candy cups, and in the past year pads of colored corrugated glassine have reduced breakage and added to the appearance of many packages. In commenting on these special industrial glassines, mention should be made of progress in perfecting a lacquer-coated glassine of high shine and perfect transparency. Several papers of this type have been brought on the market during the past year and are being used commercially for bags and carton wraps. A lacquer-coated glassine should be highly transparent, odorless, heat-sealing, glossy, moisture-proof, greaseproof, readily printable and of moderate cost. It is quite possible that 1934 will record the perfection of such a sheet despite the many qualities that must be combined therein.

It is obviously difficult to treat with such a complex group of papers in a few paragraphs. The glassine mills, however, are located at central points throughout the country and employ large laboratory staffs, available without charge to package designers or manufacturers.

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FOLDING CARTONS AND CONTAINERS

by Willard F. Deveneau

WHILE rapid strides have been made in all kinds of packages, the development of the folding carton from an inexpensive and ofttimes cheap-looking container to a real place in the field of self-selling packages is significant. The roll call of manufacturers utilizing folding cartons today is almost as wide as industry itself, varying from the makers of penny goods to those making products costing American consumers $1.50 or better, or in terms of the products themselves from absorbent cotton to waffle irons, and from microscopic lenses to the loveliest of cosmetics.

The major advantages claimed for folding cartons are:

1. Minimum of original package costs.
2. Ease of handling and shipping.
3. Economy of storage-space and warehousing expense.
4. Suitability for large or small production, and manual or machine-filling operations.
5. Ready adaptability to a large number of products, varying widely in size, shape, weight and general characteristics.
6. Ability to build added value into a product, in the consumer's eyes, through giving it better appearance, increased interest, larger size and greater convenience.
7. Giving a line of products a definite family resemblance, thus enabling the "leader" to carry the lesser known products to a point of acceptance and purchase.
8. Ready accessibility, so that the consumer may examine the product before actually purchasing.
9. Ideally meets the requirements of retailers from an identification, inventory, storage and display standpoint.
10. Possessing to a high degree the ability to catch the eye of the consumer in a store, encouraging her to stop, examine and finally sell herself, without the aid of the clerk, as a direct result of the carton's selling message.
11. Susceptible to reproduction of almost any kind of a decorative design, from plain type printing on plain white or colored board, to multi-color process printing or lithographing.
12. Assurance that the product will reach the consumer's hands in the same attractive manner in which it left the manufacturer.

A general criticism of all manufacturers of packaged goods is that the majority do not give the same careful and thoughtful consideration to the package that they give the product. True it is that the product must give satisfaction to the consumer, and therefore must be right, but to what avail are careful selections of raw materials, expensive laboratory tests and the other familiar tests of product development, if the package is so weak, from a self-selling viewpoint, that consumers never even become conscious of its existence? It is the combination of a product that is right, and a package deliberately designed to appeal to consumers in terms of their own selfish interests, that makes them stop, look and buy and brings success and satisfaction to manufacturer, jobber, dealer and consumer in like measure.

There are many practical facts which the manufacturer must assemble and analyze for himself before he can safely rush into the development or judging of the mechanical or artistic design of his package. A few of the major points are itemized:

1. What is the product? A luxury? A necessity?
2. What are the advantages for the consumer in the purchase and possession of the product?
3. What competition will the product have to meet and overcome?
   (*a*) Direct—from similar products
   (*b*) Indirect—from dissimilar products claiming the consumer's dollars
4. What is the simplest selling appeal for the product?
5. Where will the product be sold? Nationally or sectionally? In the cities? Towns? Villages? Farm communities?
6. Who will buy it?
7. Why will they buy it?
8. What size unit will they buy? 1st choice? 2nd choice?
9. Where will consumers buy it?
10. How will consumers be made conscious of the product?

Having determined these basic facts, and set them down in writing, the manufacturer can then safely proceed with the next logical step: *Size and Form of the Package* (mechanical construction). There are three important viewpoints to be considered in this mechanical stage:

1. CONSUMERS: the package must meet the requirements of:

a. Attractiveness of construction.
b. Ease of access and use.
c. Generally accepted unit of purchase.
d. Protection of the product.
e. Requirements of storage in home pantry, medicine chest, tool kit, etc.

2. RETAILERS: the package must be mechanically designed to:

a. Meet requirements of handling and storing, taking the least effort, time and space.
b. Ready display on shelves, in show cases, on counters, etc.
c. Be of a size that occupies the least front footage of display space.
d. Be of a unit that is readily acceptable to the dealer's customers, without argument or repacking.
e. Allow for examination of contents before purchase with least trouble to the dealer.

3. MANUFACTURERS: the package must meet the requirements of:

a. Economy in package cost.
b. Economy in production operations.
c. Economy in storage space.
d. Adaptable to existing filling machinery.
e. Adaptable to existing shipping containers.
f. Ease and economy in handling.
g. Made of readily available materials from several different and convenient sources.

With these mechanical considerations clearly stated, and an actual sample of the product before him, practically any carton manufacturer can make an intelligent recommendation, in the form of one or more blank dummies, submitted without charge or obligation. There is seldom only one way of packaging a product, and this gives rise to the mechanical ingenuity of the carton manufacturer to suggest several different packaging methods, enable the prospect to make a wise selection and thereby deserve his confidence and patronage, by having established confidence in the real ability to serve.

Having completed the important preliminaries of (1) defining the marketing job to be done, and (2) the mechanical construction that will best meet the needs of the three different factors in the flow of merchandise from maker to user, the next step is the development of the Decorative and Copy Treatment or Design.

On practically all folding cartons there are six spaces available for such treatment: (1) front panel; (2) rear panel; (3 and 4) side panels; (5) top panel; and (6) bottom panel.

The custom of repeating the front panel design on the rear panel is growing in popularity, inasmuch as this facilitates display on the dealer's shelves, with the least effort on the part of the dealer or his clerks to make sure that the front panel always faces the consumer in the store. The side panels can effectively serve, on the one hand, to give necessary information about how to successfully use the product, and, on the other, to do a selling job on other products in that particular line. The top panel has but one function, namely, identification of the product. The bottom panel has little real value, as it is the base or foundation on which the folding carton stands.

It is generally conceded that it is a safer policy to first determine the copy that shall occupy the various positions on the carton, and then proceed with the artistic and illustrative treatment, than vice versa. A safe rule in writing package copy is to first write it out in as many words as it takes to tell an interesting, clear and concise sales story that will "make sense," and then by intelligent elimination reduce it to the smallest number of words possible. If this produces too much copy to fit on the carton, without giving it a crowded appearance, it is far better to place it on a package insert, where it may be treated in as much detail as necessary, utilizing the various carton panels for attention-arresting and sales-compelling phrases, referring to the "enclosed insert for complete directions and uses."

The color scheme to be utilized will be determined by the nature of the product, its fundamental selling appeal to the consumer, and the impression that the folding carton must make on the consumer. To the manufacturer who does not know the psychology of colors it is much safer and more profitable to entrust this to competent counsel, than to blunder in, "playing hunches" or catering to one's own likes and dislikes.

Modern packages that sell themselves on sight will be found to have one characteristic in common—they are stripped of all superfluous decorations and copy, and convey to the consumer, in few words but very much to the point, a sales-compelling story that has a distinctly selfish appeal to the consumer, that immediately stops him, interests him and leads him to buy. The decorative treatment, whether it be solid panels, bands, borders or illustrative material of some nature, must serve the purpose of arousing the consumer's attention, which through the copy leads the prospect to the ultimate goal—a buying decision. Many packages, now on the market, excel in artistic designing, but from a self-selling viewpoint are "beautiful—but dumb." The ideal package arouses attention to itself through its color and decorative treatment, and then leads the prospect attractively and directly to the copy message, which does the informative and persuasive job of bringing conviction to buy. The dumb package is so beautiful that while it attracts attention, it never gets beyond that point, for the package beauty overshadows the copy message, and it is rightfully judged a package-design failure.

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The sound judgment and experience of representative carton manufacturers is readily available to any one having a packaging problem. In most cases best results will be obtained by furnishing the carton manufacturer an actual sample of the product, and capitalizing on his experience for the type of mechanical construction best suited for the particular package, as well as style and weight of folding boxboard to be used.

In addition to this mechanical design service, some of the more progressive carton manufacturers have trained merchandising men and artists on their staffs to plan and execute the decorative scheme, write the necessary copy, select the best type and otherwise do a complete job from start to finish. It should be borne in mind that "any package design is as good or bad as the facts on which it is based." This places a responsibility on the manufacturer, seeking help on the creation and design of a practical and successful folding carton, to furnish the supplier with all available facts about the product and its marketing, as indicated in the first section of this article.

If the manufacturer feels it desirable to have a professional package designer do the design job, on the basis that he can approach it from an impartial, unprejudiced and unselfish viewpoint, he has three immediately available sources:

1. Package designers, operating on a fee basis, working independently of any manufacturer, who render professional advisory service on every phase of the package.

2. Advertising agencies and marketing counsellors, many of whom have special packaging executives on their staffs.

3. Commercial artists, some of whom through past experience are particularly well fitted to advising on package design and development work.

The final acceptance and adoption of a package design rests with the manufacturer, and unfortunately the majority of them are totally incapable of passing judgment. Costly experience has amply demonstrated that many a perfectly grand looking package, exhibited on a broad expanse of mahogany desk or conference table, loses all of its appeal and pulling power when surrounded by rival brands on a dealer's store shelf.

Supposing the new or re-designed package is beautiful, flattering to the manufacturer and loudly praised by his associates? In present-day merchandising it has been found that there is a new, better and more effective judge of any package, namely, the consumer. Trained through years of advertising and other improved educational opportunities, the consumer is quick to register his approval or complete ignorance of a package.

In every retail establishment today a bitter battle is being waged. The Battle of the Brands—a race for consumer's attention, acceptance and purchasing. In order to win, the package must be styled (designed) to harmonize with the pleasure, benefit or satisfaction that the possession and use of the product will bring the consumer. The final judgment of the value of a carton design rests, therefore, with the consumer. So design your cartons that they please consumers, and sales readily register their approval. Trust your own judgment, and make your selection to please your own selfish viewpoint, and you are courting lost sales and diminishing volume in the products you package.

PARAFFINED CARTONS AND CONTAINERS

by Willard F. Deveneau

WAXED or paraffined cartons and containers were developed to fill a definite need, which had five peculiar characteristics:

1. Maintaining and protecting a moist, perishable product within the walls of its own original package.

2. Protection against the penetration of moisture, from the outside, through the walls of the original package (as in iced refrigerators).

3. Maintenance of the original sweetness and purity of a manufactured product against contamination by outside foreign odors (such as fish, onions, cabbage, etc., for which butter has a natural affinity).

4. A practical package for perishable and greasy products, fitting in with manufacturing operations, shipping, retail store handling, storing, sale and display, and convenience to the ultimate consumer.

5. Economy in labor, container, shipping and manufacturing costs, so that perishable and costly products may be swiftly, economically and attractively marketed to the general public.

While, with the development of the packaging art, new products are being constantly developed, the major ones especially adapted to be packaged in paraffined cartons and display containers are: Butter, oleomargarine, ice cream and sherbets, lard, vegetable shortenings, smoked meats—such as bacon, sausage, etc.—and salted nut meats.

It has been conservatively estimated that products valued at around one-half billion dollars find their way from point of manufacture to retail stores, every year, packaged in paraffined cartons and display containers.

SPECIFICATIONS—CARTONS AND DISPLAY CONTAINERS

by Arthur J. Weiss

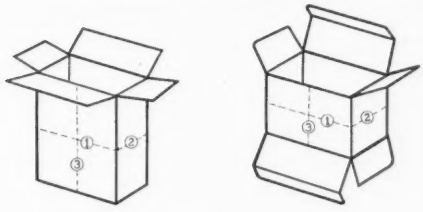
DUE to the lack of uniformity or standard method of specifying the dimensions of a folding carton, causing frequent misunderstandings and errors in the industry, the Paperboard Industries Association adopted at a meeting, held on May 21, 1930, a simplified standard for stating the three dimensions of a folding carton.

Shown below are diagrams indicating, by number, the sequence in which specifications are to be presented, thus, in the case of either carton or counter display container, the following will apply:

1. The larger dimension at the opening.
2. The smaller dimension at the opening.
3. The third remaining dimension.

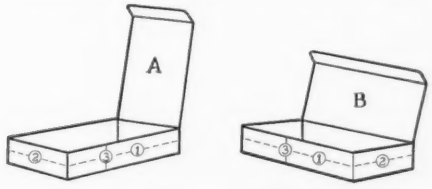
All measurements are understood to be from center of crease to center of crease.

SEAL END CARTON
REVERSE TUCK CARTON



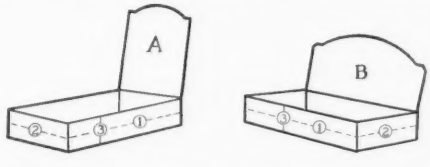
ONE-PIECE BOXES WITH COVERS

State whether or not cover extends from first or second dimension. (That is, whether like A or B.)



DISPLAY CONTAINERS

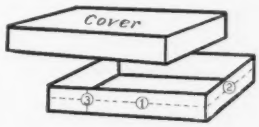
State whether or not display panel extends from first or second dimension. (That is, whether like A or B.)



Adherence to this rule will greatly facilitate mutual understanding and tend to make a uniform system.

TWO-PIECE TELESCOPE BOX

In two-piece boxes dimensions of bottoms are given.



REVERSE TUCK CARTON

Popular style for low-priced candies, toilet and pharmaceutical articles, extracts and other products. Easily set up by hand, and may be packed automatically. Conveniently opened and closed for removal of contents, as used. Economical in manufacture because cartons interlock.

REVERSE TUCK CARTON WITH ARTHUR LOCKS

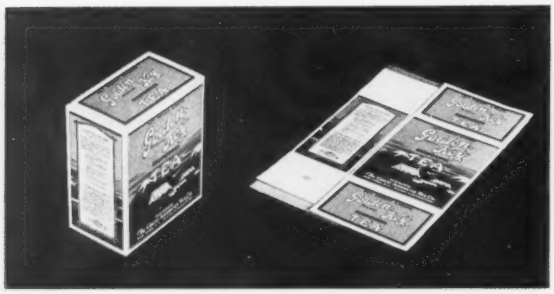
Same as reverse tuck, except bottom side flaps lock to prevent heavy contents from falling through bottom. Used principally for packing jars and bottles containing toilet preparations, medicines, condiments and other heavy articles. Sometimes made with Arthur side locks both top and bottom, to hold flat round jars and similar objects securely.

STRAIGHT TUCK CARTON

Has no advantage over the reverse tuck carton except that it is required for operation on some automatic machinery. It is extensively used and is particularly adaptable to high speed automatic cartoning. Must be made with right and left glue seams to secure the economy of interlocking.

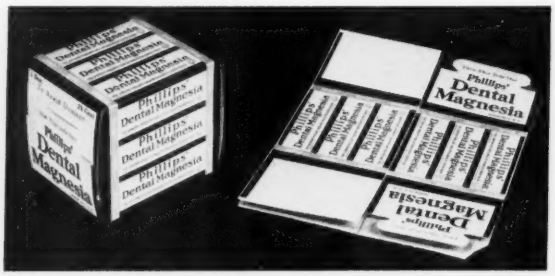
COLONIAL LOCK BLANK

A folding blank, supported when set up by interlocking hooks and catches, requiring no gluing either by the box manufacturer or the user; very economical because of sheet layout. In universal use by biscuit and cracker manufacturers and is generally enclosed in a sealed, printed wrapper.



SEAL END CARTON

The most popular style carton for packing flour, cereals, sugar, salt, teas, coffees, spices and many other food products, soap powders and other cleansing preparations. Difficult to seal by hand; but packed and sealed on automatic machinery it reaches the consumer with the contents untouched by hands and well protected.



GREENLEAF CARTON

Locks at each end securely. Extensively used for packing dried fruits and other heavy or bulky food products; also as shelf containers holding individual packages in sales units as shown.

SEAL BOTTOM, TUCK TOP CARTON

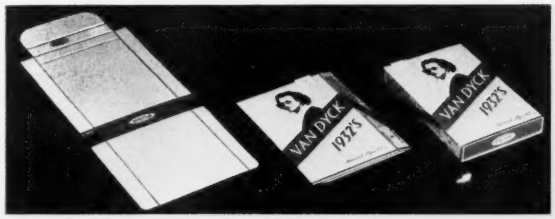
Handy as a pocket package for cough drops and small candies as well as for various other products. Has the advantage of the solidly sealed bottom and the convenience of the easily opened and closed tuck top for the free use of the contents. Packed on automatic machinery. Not adapted to hand packing, because of bottom sealing operation.

TUCK TOP, GREENLEAF BOTTOM CARTON

An adaptation of both styles, permitting the security of the Greenleaf lock on the bottom and the convenience of the easily opened and closed tuck top. Used for the larger candy packages, heavy food products, shelf containers and many other purposes including individual sales units.

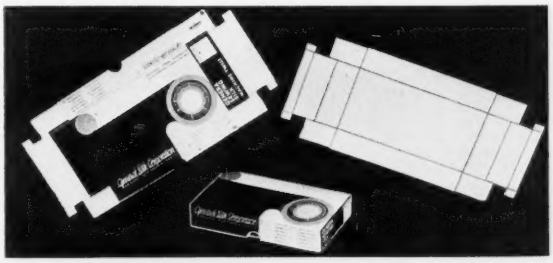
PETERS LOCK BLANK

This is similar to the Colonial lock blank except for the machine set-up. Likewise used extensively by biscuit and cracker manufacturers, and generally enclosed in a plain or printed wrapper.



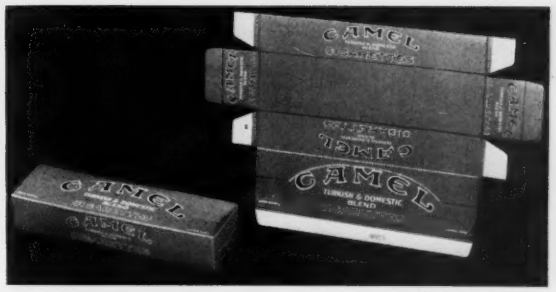
TUBE AND SLIDE BOX

Consists of a folding blank variously contrived, to be inserted in a tube. Its two-piece construction makes it substantial enough to be carried without damage in the pocket of the consumer. It permits the easy removal of one article without spoilage of those remaining. It is extensively used for cigars and cigarettes, pencils, crayons, etc.



TWO-PIECE PROSPECT BLANK

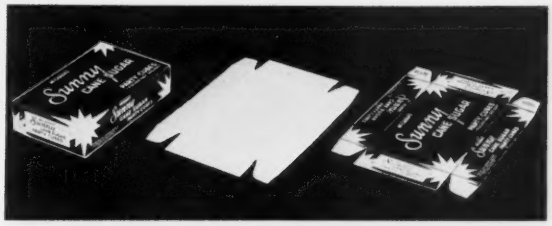
Two-piece box made up of blanks folded by hand. The ends overlap and are held against the side by friction. The cover may be made full or part depth and the blank glued at the side affords additional reinforcement, a recent development of the overlapping end blank in which an extra tab is provided as an extra protection at the corner. A similar reinforcement along the sides can be provided without the necessity of preliminary gluing. This style is the most recent development of the hand assembled telescope box. It has many decided advantages in the textile and in other industries, where it may be substituted for a solid box.



BRIGHTWOOD BLANKS

Brightwood machinery is installed in the user's plant for the purpose of setting up and gluing two styles of blanks, both of which are illustrated.

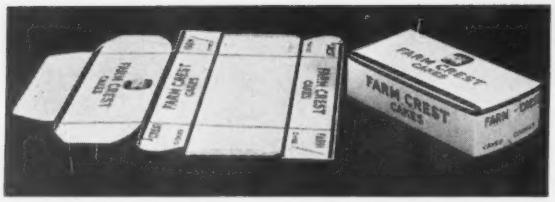
The one-piece blank is folded and automatically glued along the vertical panels by a carton forming machine, which automatically fills and seals it. It is necessary for the user to have sufficient production to gain the economies made possible by the use of the automatic equipment.



The two-piece style machine is fed blanks which are automatically glued into box and cover. The types are various—the cover may fit over the box to its full length, or only part way. Both one-piece and two-piece are adaptable to a wide variety of products and offer economy where there is sufficient production.

BROAD-WAY OPENER BOX

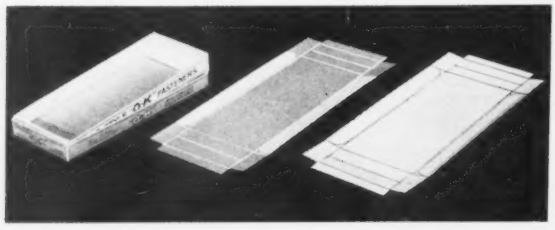
A new development in cartons that permits of inexpensive automatic filling through the ends of the cartons after which the ends are sealed and the box is opened the broad way, hence the name. This box may be also finished to form a counter display container without impairing the economical filling operation. Patented.



ONE-PIECE TWO AND FOUR HOOK CATCH BLANKS

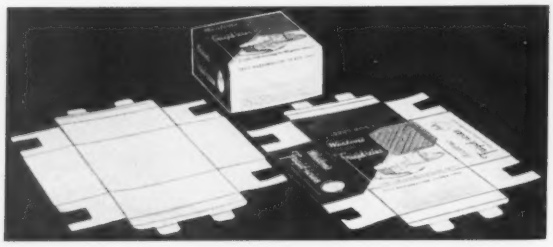
An economical style of box, in which hook catches at the four corners hold the box in place; very economical to manufacture, but difficult to set up. This

style is not sufficiently durable to stand transportation or rough handling, but is a particularly suitable box for the baker, where small quantities are required in a number of different sizes.



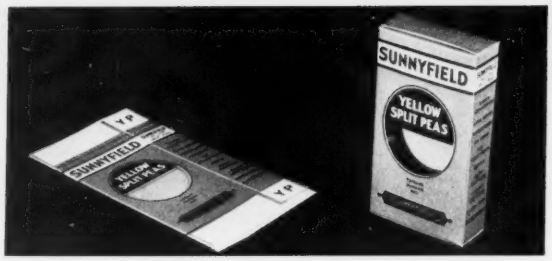
TWO-PIECE FULL TELESCOPE OVERLAPPING ENDS CARTON

A good substitute for a solid box—is economical to manufacture, easily set up by hand, and makes a very neat, substantial package. It is used very frequently for candies, also for dry goods, etc.



TWO-PIECE OVERLAPPING BOLT END BOX

This box is very secure. It is used extensively for packing hardware and other heavy matter where strength of the full telescope feature is desirable.

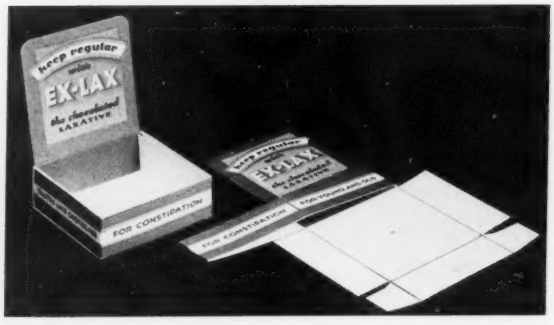


TRANSPARENT CELLULOSE WINDOWS APPLIED TO ORDINARY CARTONS

Manufacturers of candies, cakes and other products usually bought on sight are desirous of having their folding cartons made with a window to reveal the contents. Formerly, gelatine was used, but of recent years transparent cellulose has made rapid strides and is often used in its place.

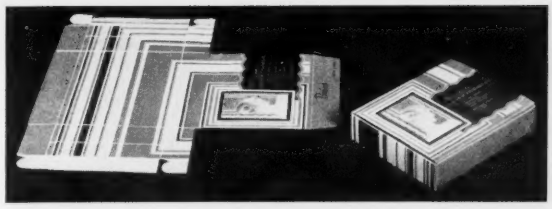
POURING SPOUTS APPLIED TO SEAL END CARTONS

There are a number of different devices applied to the top panel of an ordinary sealed carton to permit of easier access to the contents, but one of the most unusual is the one illustrated. The pouring spout is fashioned from the top flaps of the carton, and when properly operated by the housewife, is formed into a spout which may be opened and closed at will. Patented.

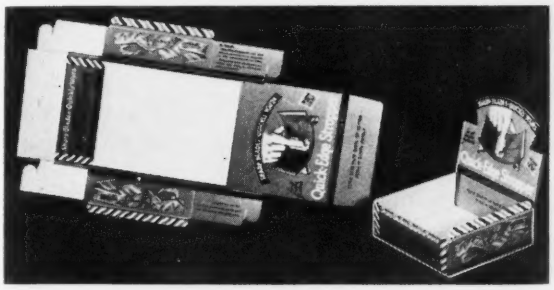


CLIMAX COUNTER DISPLAY CONTAINER

Very simple to set up. Lies flat on the counter. A protective cover is necessary, making the box more expensive than the panel-fold which has no cover. Requires printing and coating one side only. Display panel is equipped with supporting flap.

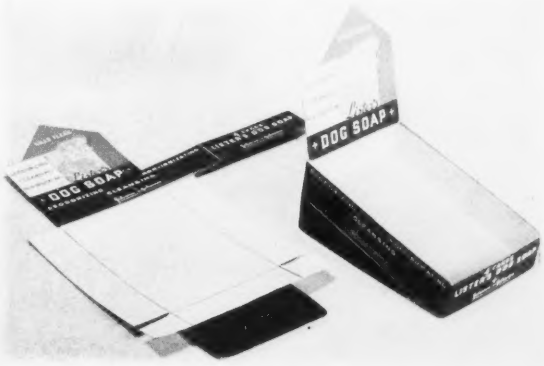


ONE-PIECE OVERLAPPING SIDES



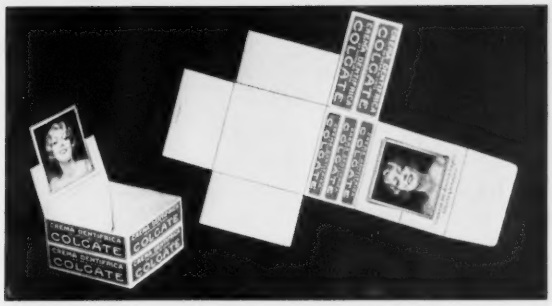
ONE-PIECE OVERLAPPING FRONT—LOCK BACK PANEL FOLD COVER

Economical to manufacture and extensively used for display purposes, this box has the added strength of the overlapping front which is not provided in the straight front box. The box can be made with panel-fold style display top, making possible the economy of printing on one side only. Both illustrations above show adaptations of the same type.



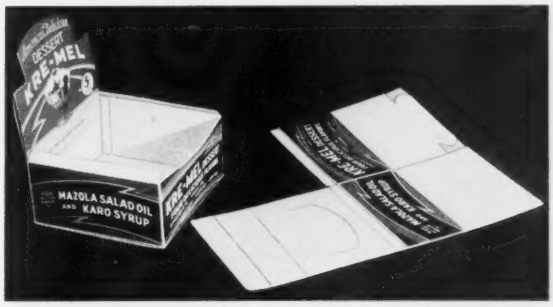
TINSLEY COUNTER DISPLAY CONTAINER

A box of patented design, so contrived that the cover, folding under, proves an easel support to display the goods. A remarkably successful type of display box because of its simplicity in construction, its ease in setting up, and because it has sufficient strength to act as a combination carrying and display box. It is susceptible to fine printing, required on one side only. The display panel is held at the proper angle by a supporting flap. Much of the universal success of this box is due to the fact that it is easily converted from a carrier to a display container by the retailer.



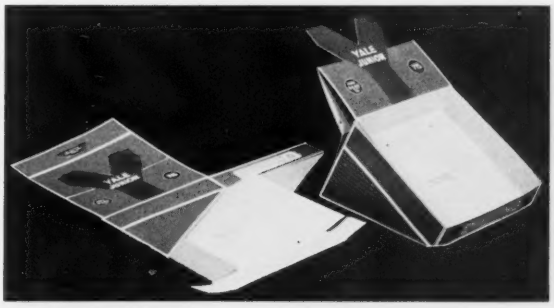
PANEL-FOLD COUNTER DISPLAY CONTAINER

Simple in construction and setting up. Cover is so arranged as to make an attractive display panel. Protective cover is optional. Stands flat on the counter and provides good visibility to the displayed items. Requires printing and coating only on one side of the board.



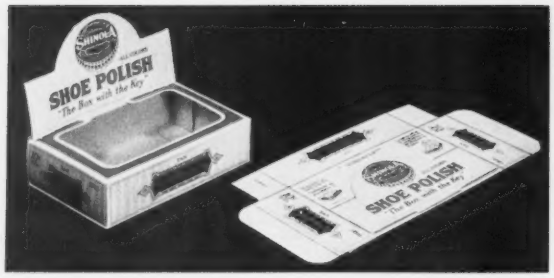
PANEL-FOLD CONTAINER WITH LOCK BOTTOM

Similar in general appearance to the panel-fold, except that the locking device is on the bottom. This makes possible gluing of box on automatic machinery, with resultant speed and economy.



SIMPLEX COUNTER DISPLAY CONTAINER

Simple to set up. Special easel feature permits tilting at different angles. Principal feature is simplicity with which dealer may display the goods at an angle. Protective cover is necessary. Requires printing and coating one side only. Display panel is equipped with supporting flap which enables advantageous showing of the advertising message.



FIVE-PANEL COUNTER DISPLAY CONTAINER

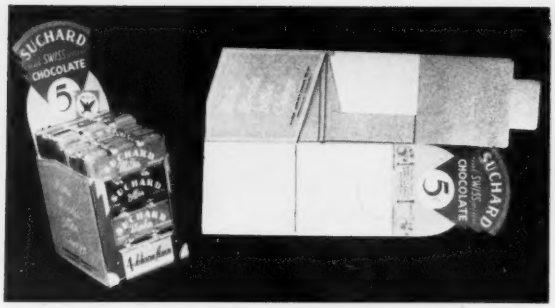
Old established style still in limited use. Requires printing two sides and coating two sides. Somewhat difficult to fill, since the packer must insert goods from side. Lies flat on the counter. Display panel is equipped with supporting flaps which hold it in an upright position at all times.

TILTING DUMMY DISPLAY

Excellent for perishable articles, like cheese and butter. Shows replicas of the individual packages, but does not hold any goods. Automatically set up by dealer as he places in the side tucks, an economical and attractive display.

ROSE DISPLAY CONTAINER

A very effective blank and one of the leading types of display containers. The cover section forms an easel, and is very readily transformed from a shipping box to a tilted display box by the storekeeper. It does, however, require that printing be done on both sides of the board.



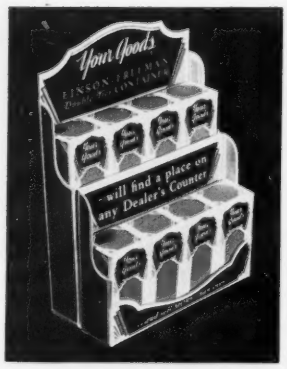
DARRAGH DISPLAY CONTAINER

Another recent addition to the display container field, the main feature of which is that the contents when loaded for shipment are in an upright rectangular position, but when the box is set up for display, the contents are thrown to a stacked position and make a very attractive appearance on the counter. Also, the box is so constructed that the display panel is held in a certain position more or less rigidly and does not flop forward or backward as do so many containers.

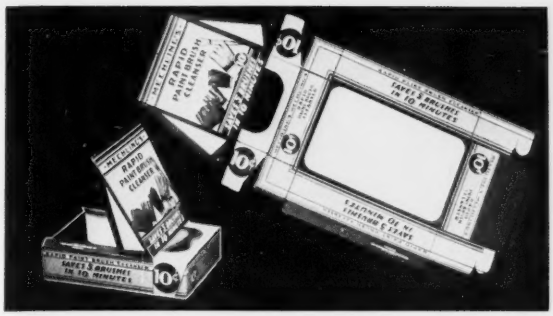
GAIRWAY DISPLAY CONTAINER

An effective new type of display container in which the individual contents are packed in a staggered manner for better display. Particularly useful for fragile packages put out in glassine bags. Very easy for the dealer to sell, and the contents are kept in tidy position while on the display counters. This display is protected by patent.

SKYSCRAPER (BROKEN BACK)

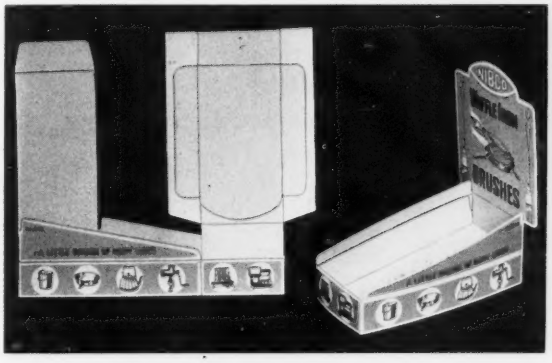


A recent addition to the field of counter display containers which displays contents in two tiers and stays on the counter in an upright or "skyscraper" manner rather than the familiar long horizontal shape. Some are made with an easel in the rear to hold the second tier in a raised position. Patented.



DISPLAY DISPENSER

A new departure in counter display containers. Instead of the conventional type of display container which shows goods on display with the display panel in the rear, this container has the display panel part way back. In front of the display panel appear several of the articles on display. The bulk of the product is packed *behind* the display panel making for convenience of the store clerk. The unsightly appearance of half-filled containers is avoided. This container always retains an orderly appearance until the last package is sold.



BROOKS' DISPLAY CONTAINER

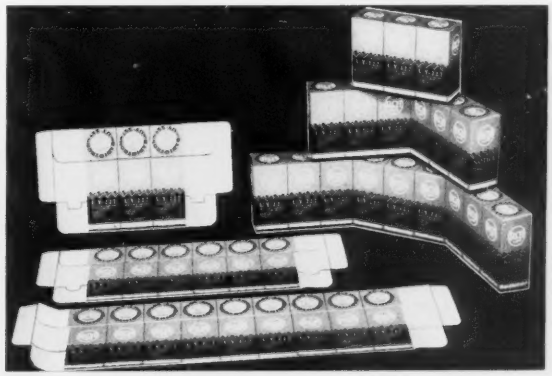
A counter display box complete in itself; that is, no protective cover is necessary. The box is equipped with a tab at the rear of the goods which the dealer elevates and secures in the rear panel. This throws the goods on display to a desirable angle.

BROOKS' SIMPLEX CONTAINER

Same style as Brooks' display except that the elevated section is supported by folding in rear corners of base. Made either with single display cover or with fold-over display lid and can be used as a complete shipping unit. Display as well as other Brooks containers shown are protected by patents.

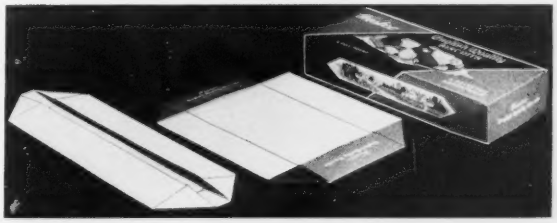
BROOKS' DOUBLE COVER CONTAINER

An elevating display in which the retailer must set up the display panel in order to uncover the contents, with a positive wing type support for the elevated section of the box.



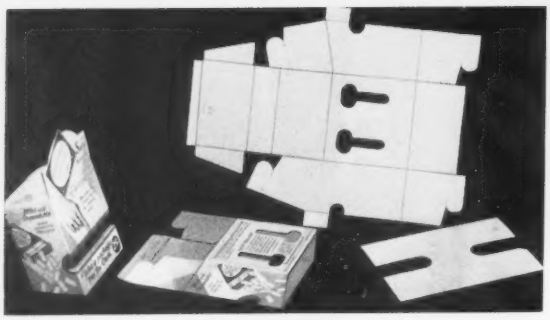
GIANT PYRAMID WINDOW DISPLAY DUMMY

An effective window display in pyramidal form made up of three folding boxes. Distributed in knocked-down form. Easily erected and very stable. The whole unit may be moved from one position in the show window to another without disturbing the form of the display in any manner.



TWO-PIECE FULL TELESCOPE COLLAPSIBLE BOX

These boxes are glued in collapsible form and shipped to the user in that manner. The user merely pulls them open and the boxes are then ready to be filled. The great advantages of this box are that no setting-up machinery is required and it is inexpensive in manufacture.

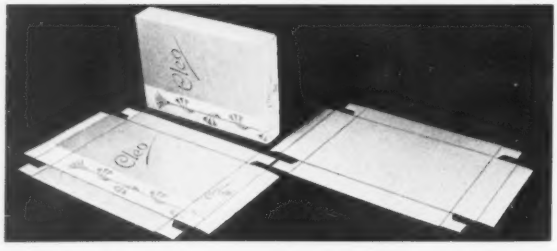


GRAVITY DISPENSER

Another type of dispenser which can be equipped with separate dividers when two or more rows are desired for a greater advertising surface. This container can be designed to any desired tilt, and can also be equipped with an easel when the container becomes topheavy. The container also has a sales thermometer in the rear to show when to refill.

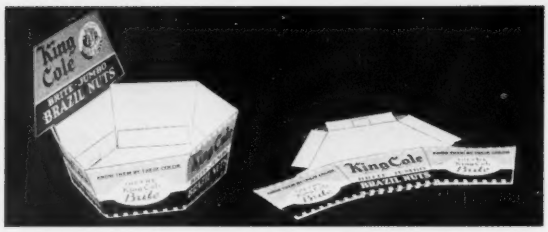
BETTER-VIEW DISPLAY STAND

A simple collapsible contrivance used for counter or window display of a two-piece telescope box. Usually made so it will fit within the box. When erected it shows the bottom with the contents showing at an angle, and the cover behind it. The cover is used as a display panel. Makes effective window display at little cost.



TWO-PIECE FULL TELESCOPE BOX

A comparatively recent and important addition to the types manufactured by the folding box industry. Its particular advantage is that it is shipped to the user's plant in flat, knocked-down form and set up by the user at his will. The transportation and storage of empty set-up boxes is obviated, and many progressive manufacturers are turning to this type of box. The corners are particularly strong and the box can withstand a great deal of stacking stress. It is made with reinforced side and end walls in a variety of types. This box is set up on automatic machines, or on hand setting-up machines.

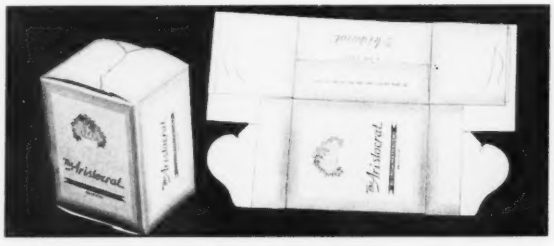


BASKET DISPLAY

A container designed primarily for floor or counter display. It does not serve as a shipper but is easily set up by dealer, with the contents in a pleasing disorder. Adapted for quick sales of small packages.

PYRAMID DISPLAY

An advertising unit only, designed to replace the actual carton or package. The pyramids are shipped flat and may be easily set up by the dealer and present an unusually attractive feature adaptable for use in window, counter and shelf display.



ICE CREAM CARTON

A new advancement in ice cream packaging. A folding type of carton embodying several attractive features. The construction of the lock ends renders the box liquid proof eliminating the need of liners. It may be neatly and easily opened through the use of a special flap.

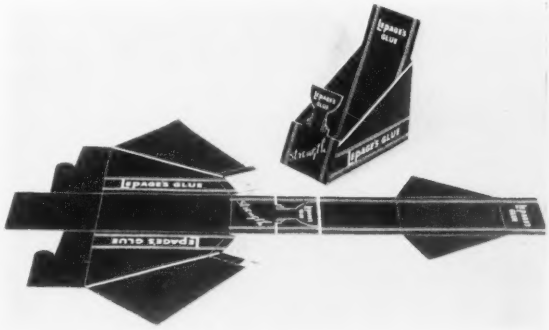
ONE-PIECE COLLAPSIBLE CONTAINER

A simple one-piece container serving as a carrier especially useful where quick set-up and economy of cost are factors. It is, of course, shipped to user in knocked-down form as shown in top figure.

XUM

POCKET FRONT-PANEL FOLD-LOCK BOTTOM

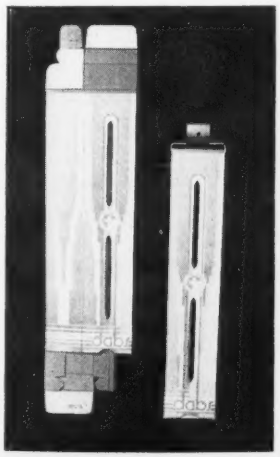
An unusually ingenious form of the dispenser type display container. The contents are sold from the stock packed in the main portion of the container—while the pocket or pouch front permits of an effective continuous display of the actual article. This prevents unsightly gaps in the display line and thus successfully overcomes a frequent objection to the counter display.



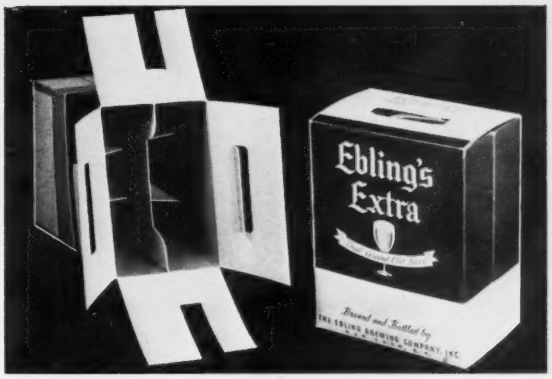
RHOMBOID DISPLAY CONTAINER

A novel display container and shipping unit. The sloping sides and special construction permit of displaying the goods in slanting tiers presenting a novel effect. Provided with a protective sleeve, it may be shipped packed in set up form ready for display. Especially well adapted for the display of tube or bottle cartons and similar small packages.

SELF-SERVICE CONTAINER

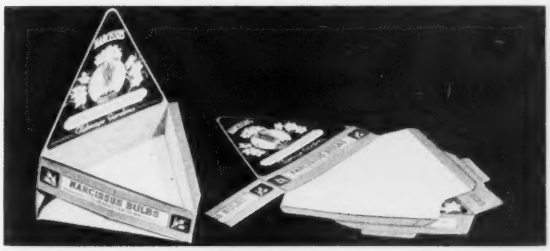


This high, narrow type of container, designed to occupy the minimum of space on especially crowded counters, utilizes the same "automatic" vending machine principle which piles up a single row of packages, providing an opening at the bottom through which a package may drop or be withdrawn. Fits into odd nooks or corners, or may be hung from a nail on a shelf.



BOTTLE CARRIER

A sturdy container designed to carry six beverage bottles. It serves both as a display unit and with the handle makes a splendid "carry home" package, thus promoting the sale of the six bottle unit. This container is protected by patent.

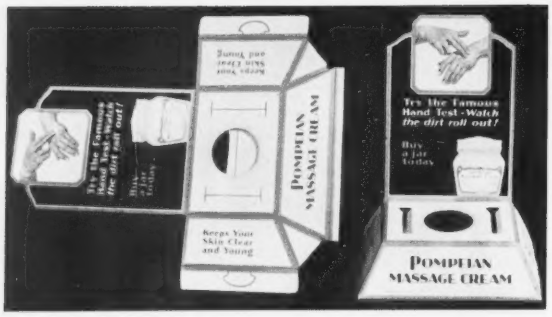


TRIANGULAR TINSLEY CONTAINER

A novel development of the patented Tinsley style of display container. Triangular in shape—its novel appearance insures consumer attention. It of course incorporates the tilting feature of this display style and similarly serves not only as a display, but as a compact, substantial shipper. Its style is especially well adapted to the display of small articles of odd shape that can be shown to advantage.

STEP DISPLAY

The two or three tier display stand illustrated fills a particular place in today's merchandising scheme. The stand is shipped flat—in three pieces and is easily set up by the dealer. It includes a fibre support for the steps and a display card for the rear. It is especially well suited to the display of packaged baked goods or similar packaged material and has proved of real value as a means of securing counter or floor display in various retail as well as the chain stores.

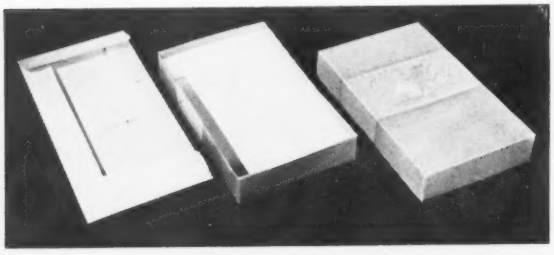


FIVE-PANEL COUNTER DISPLAY

An interesting adaptation of the "Trial" or "Sampler" counter display. The platform base with proper cutout apertures or slots holds the actual articles properly set up for trial or sampling. This can be easily set up in the familiar tuck carton form and the display card naturally assumes its proper place presenting ample display or instruction space.

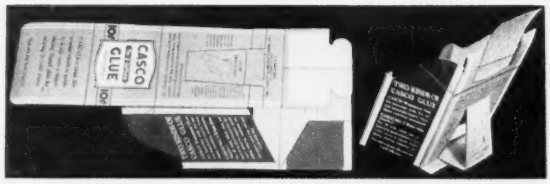
ONE-PIECE COLLAPSIBLE BOX

A one-piece cover type of container shipped in flat form. It is quickly and easily set up ready for use. The slots permit of locking in the cover, making this style especially well suited for baked goods and similar products. The use of a transparent cellulose window in the cover adds an attractive feature.



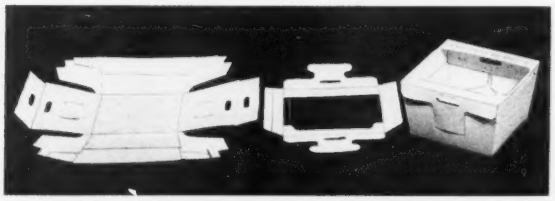
SIMPLEX BOX

This advanced development combines the advantages of the solid or set-up paper box—rigidity, finish and strength—with the economy in first cost, shipping and storage, of the folding box. No machinery is required to erect these boxes instantly into position to receive contents. Made for all purposes—from the fine candy box with extension edges and laces, to large containers for blankets. All Simplex boxes are protected by patents. These are furnished in one-piece and two-piece types, the latter being shown in the illustration. Like the two-piece box, the one-piece Simplex box is instantly erected. Its construction affords maximum strength and rigidity for the caliper of board used. No cut edges or outside locks to mar the printing or appearance of the box. Made with and without display lids and with slide over covers optional. Requires printing or coating on one side only. Used in the candy and food industries and for display container purposes.



TILTING LOCK BOTTOM-PANEL FOLD COVER

An attractive type of the very useful tilting display container. This is particularly well adapted to the display of small packaged items such as tubes or bottles. The tilting feature is simple in construction presenting no difficulties to the storekeeper—thus insuring proper display on the counter. The cover gives proper display value.



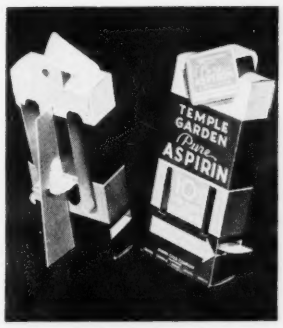
BERRY CARTON

The paper berry basket is now an accomplished fact. This type of paper carton has proved its adaptability to replace the time worn wooden basket. The paper basket illustrated is made up as a folding basket style with wire stitched overlapping sides to set it in proper position for use. The raised bottom effect and slotted sides insure proper ventilation for the contents. It can also be equipped with window cover, which is secured with locks.

BROOKS TWIN DISPLAY

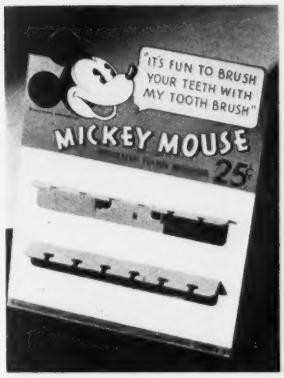
A new patented twin display containers, the two sections of which nest into each other giving the dealer two distinctive counter displays. Striking success of this economical design is due to the fact that for the manufacturer it is easy to assemble and that for the dealer it requires no involved labor to set up.

"PUSH-PULL" DISPLAY DISPENSER



A new development in counter dispensers, consisting of two slots or sleeves, holding units of 12, 18, 24 or 36 small packages, such as ten-cent aspirin tins, which are dispensed by means of pulling or pushing a small lip or flap extending from the bottom right side slot. When the lip is pulled one package is ejected from the right side, and when it is pushed in, one package is ejected from the left side. Possesses excellent display value on front panel and ease of dispensing, either by the consumer or store clerks. The illustration shows front and rear view of this type. The latter, as may be seen, enables the dispenser to carry a reserve supply of stock that is visible at all times.

COUNTER DISPENSER CARD



A sheet of substantial board, such as coated blanks, may be made into a variety of attractive styles of counter dispensers. "Mickey Mouse" card illustrated is die-cut with two shelves or lips holding twelve tooth brushes prominently on display. This particular card is equipped with lips on the back of the card holding a reserve stock of twelve additional brushes, which makes it a two dozen dispenser and sales unit, rather than the customary single dozen. Fitted with an easel and wall hanger. Popular among retail dealers because it occupies a minimum of counter space and stimulates immediate purchase of displayed products.

NOMENCLATURE OF SET-UP AND FOLDING BOXBOARD

BOXBOARD as used in the commercial lines is divided into two classes: set-up boxboard and folding boxboard. Both products are manufactured on the same machine, the difference being that created by the raw materials used in each in the process of manufacture. Briefly the two products may be described as follows:

Set-up Boxboard. The commonest form of set-up boxboard is known as chipboard. Next in quality is newsboard. These are the two basic boards for practically all ordinary set-up box work. Chipboard is made from mixed papers commonly known as paper stock. Solid newsboard is made from newspapers and is therefore a cleaner and more uniform product. Newsboard is also made with a chip center, but to outward appearances it is still newsboard.

These boards are packed in 50-lb. bundles, and the thickness of each sheet is dependent upon the number of sheets in the bundle. However, both chipboard and newsboard may be ordered in various finishes; for instance, both products are sold in a dry finish and water finish, the dry finish meaning the surfaces are free from a high finish, and the thicknesses are termed rough, medium or two-dry and three-dry. In the water finish they run 2, 3 and 4. The two-water finish is not necessarily a smooth board; the three-water finish is considerably smoother, and the four-water finish is about the smoothest that chip or newsboard is made.

Folding Boxboards may be classified as follows:

Bending chipboard is made of mixed papers, but the two surfaces contain fibrous products, such as manila clippings, jute liners and old corrugated boxes. This is the commonest form of bending board.

Next is single manila, which is either a chip or a newsboard with a percentage of unbleached sulphite on one surface, thus making this surface a cream color bending board. Next comes bleach manila with either chip or news back, the surface being made from soft white shavings and bleach sulphite stock. The sulphite produces the bending quality.

Patent coated is produced with a news back, the surface being made from hard white shavings and bleach sulphite. This board is used for higher grade folding boxes, either printed or lithographed.

Folding boxboards are made on a water finish, and are produced on a basis of from 1800 to 2200 points per bundle, according to the finish required. In the very common grades of folding boxboard for suit boxes and shipping containers, there is the mist board which is practically a single manila lined finish, except for the mist colors, which can be made according to specifications.

There is jute lined board, which might have a chip back and the brown surface is produced from the use of boiled wood, and finally container board, which runs 60-, 80- and 100-points. This board is a chip center with a 16-point jute liner pasted on either side.

XUM

GENERAL TYPES OF SET-UP PAPER BOXES

by William H. Perry

THAT every one knows what constitutes a set-up paper box is a foregone conclusion. It is the intention, therefore, to list only the various and diversified attributes of the set-up box. We then ask you, who must of necessity consider your package as a most important part of present and future merchandising and marketing effort, to consider seriously all of its salient features?

If your product should be encased by such a container to properly "follow through" from all marketing angles, then by all means use set-up boxes. If it does not, then use that container which most properly answers your requirements.

Strength—Set-up boxes, by their very construction of news board, corner stays and covering paper are the strongest paper containers in existence.

Low Cost—Considering small and large unit runs, diversity of sizes and treatments they present the greatest value per dollar of cost.

(Highest) Quality—Combined with all factors above and the fact that they are completely fabricated makes them the highest quality paper container on the market.

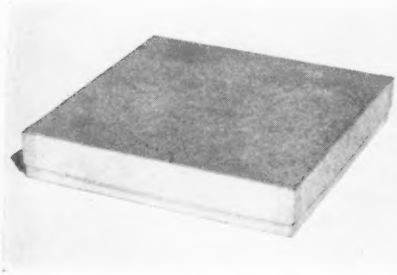
Adaptability—Set-up paper boxes have the greatest adaptability to varying sizes, shapes and covering materials hence—

Consumer Acceptance—The above intrinsic values plus proper design, after utility and proper convenience connote a sense of quality of product and hence ready acceptance by ultimate consumer.

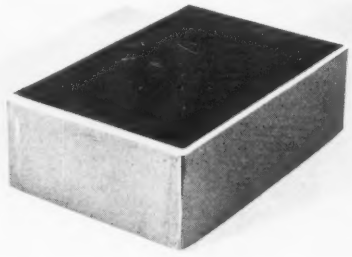
These attributes are defined and graphically described in the following columns.

GROUP 1. TWO-PIECE BOXES

Primary function is low cost container for merchandise in transit and in stock. Diversity in this group comes rather from size and strength than art design.



Two-piece rough (not paper covered), cornered out, paper stayed



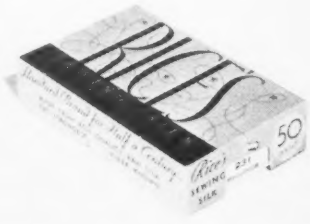
Base and lid banded, lid trimmed, lid topped telescope lid

Shallow lid, lid banded and topped, base banded and bottomed

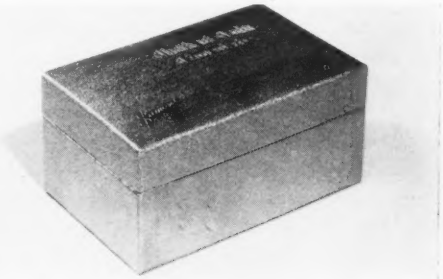
GROUP 2. AUTOMATIC MACHINE MADE BOXES

Widest variety here from what is commonly known as the two-piece solid wrap or bundle wrap style with variations and additions of both pieces and fabrication to most exquisite containers with beauty of proportion, covering materials and art design.

Simple two-piece, shallow lid, solid wrap, base and lid, complete lid surface designed for consumer acceptance



Two-piece telescope thumb-holed. Modern billboard designed for consumer appeal and customer identification



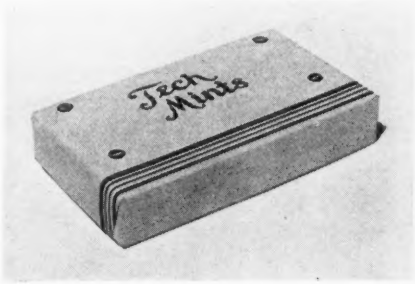
High grade candy box. Base and lid with neck added, plus domed top for added beauty (parts and trays for proper packing)

GROUP 2. AUTOMATIC MACHINE MADE BOXES (CONTINUED)

Solid wrap lid hinged to three-flange, solid wrap extension base with added died-out part in base for holding and displaying product

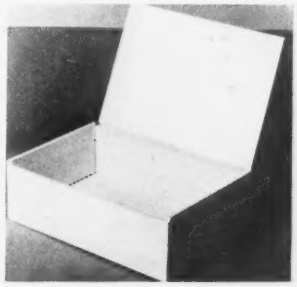
Telescope, solid wrap lid, extension edge base, transparent cellulose window (face powder drum)

Telescope, solid wrap extension base and lid. This is an example of typical candy box construction as found today

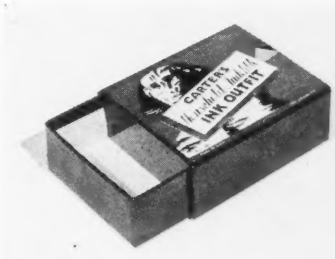


Telescope, bundle wrap lid, solid wrap base

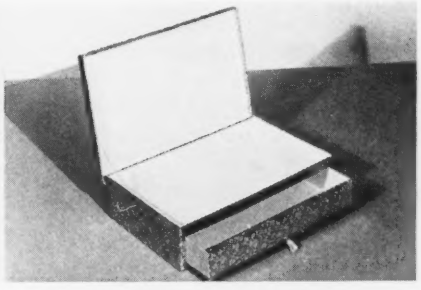
Bundle wrap base, bundle wrap lid with tray neck



Solid wrap base, flat hinged lid



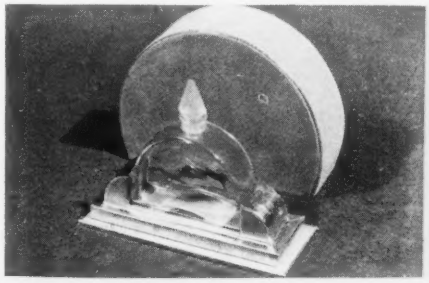
Solid wrap base with shell. A transition box or a special type box



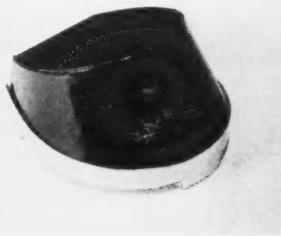
A transition type box, partly solid wrap by machine and partly hand made

GROUP 3. HAND TAILORED BOXES

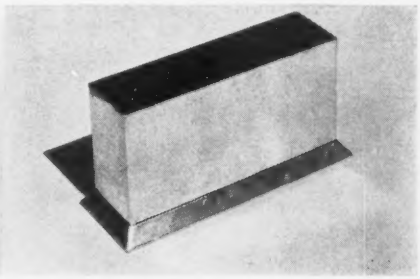
Beauty of design and proportion help to glorify the product on display. Generally these containers are most proficient in their after-utility functions



After-utility plus opportunity for entrancing display, as applied to boxes for perfumes, toiletry items, etc.



Employing high grade materials and original designs, suitable as containers for gift items, luxury products, etc.



Hand made for more or less constant service and combining utility with attractiveness. For playing cards and similar items

TYPES AND USES OF GLASS CONTAINERS

by J. K. Ilmroth

WITH current marketing methods throwing a larger sales responsibility upon the package in which products are packed for retail distribution, the glass container is now an important feature in the merchandising plans of an enormously expanded list of products. In the field of drugs, pharmaceuticals, beverages, milks and certain foods such as catsups, vinegars, table sauces, salad dressings, pickles, peanut butter, honey, etc., the glass container has long had a prominent place. With the entrance of automatic machinery into the glass industry, it was possible to reduce the cost of glass containers so that they became comparable in price with other types of packages, and their inherent advantages, particularly in display of contents, won them wide preference among product manufacturers.

From left to right: Gallon Packer, Water, Miscellaneous Food, Preserve, Milk

Distinctive appearance, conformity to the product, eye-appeal, the suggestion of cleanliness, convenient closures, visibility of contents and re-use possibilities, all have their values in the eyes of the modern sales and advertising manager. The usual colors of glass containers are flint (clear white), amber, blue, light green, emerald green, black and opalescent. To these have been added certain imported colors, notably a special shade of green. Special types of thereof can be applied over the entire surface. This feature, combined with the natural pliability of molten glass which enables it to be adapted to almost any desired form, style or finish in various colors, and the immense range of attractive label possibilities which glass containers offer, make this type of container particularly suitable for the requirements of present-day competitive selling.

From left to right: Mustard, Mayonnaise, Cream, Medicine, Prescription, Polish, Atomizer, Perfume

Now that satisfactory machinery has been developed for vacuum-packing in glass under exceptionally high vacuum, the field for their use is rapidly extending to such products as coffee, teas, spices and numerous other foods.

At moderate cost new processes have also made glass containers available with the name of the product, the trade mark or other design, fused into the surface of the glass in colors. In a similar fashion an almost unlimited range of colors and shades bottles and other containers have been developed for each division of the packing and beverage industries. Strictly modern designs have been produced in amazing variety with a highly developed technique in which simplification and effectiveness are conspicuous. Old designs are being modernized so as to gain the advantage of the improved technique without losing the spirit and prestige of the old style containers.

The glass containers most familiar to the various

From left to right: Soda, Sauce, Cherry, Extract, Miscellaneous Proprietary, Horseradish, Toilet

industries concerned are classified into four broad divisions, and then further classified into many subdivisions. These classifications are as follows:

TYPES AND PURPOSES

1. Food:
   (*a*) Milk bottles: For milk and cream.
   (*b*) Narrow neck blown bottles: For catsups, chili sauces, table sauces, vinegars, salad dressings, syrups, condiments, spices, salad oils, oyster cocktails, etc.
   (*c*) Wide mouth blown bottles: For jams, preserves, mustards, candy jars, cherry bottles, olive bottles, pickle bottles, crushed fruit jars, horseradish bottles, mayonnaise jars, vegetable jars, meat jars, salt and pepper shakers (when sold to packers), etc.
   (*d*) Pressed ware, tumblers: Used largely for jelly, peanut butter, marmalade, cottage cheese and some meat products.
   (*e*) Jars for vacuum packing of coffee, teas, spices, etc.
2. Beverage Containers:
   (*a*) For carbonated beverages, such as sodas, ginger ales, malt extracts, cereal and malt beverages.
   (*b*) For non-carbonated beverages, such as fruit juices and still water.
3. Medicinal and Toilet Preparations Containers. (Both pressed and blown.)

From left to right: Grape Juice, Vinegar, Catsup, Beer, Porter, Ale

For all medicine bottles, druggists' prescription ware, bottles for pharmaceutical preparations and manufacturing chemists, toilet preparations, cosmetics, nursing bottles, sterilizers, peroxides, citrates, hair tonics, pomades, atomizers, liniments, cold creams, vaselines, face creams, lotions, talcum powders, castor oils, flavoring extracts, liquor ware, perfume and toilet-water bottles, etc.

From left to right: Coffee, Chili Sauce, Mason, Honey, Miscellaneous Food

4. General Purpose Containers:

For acids, cleaning fluids, polishes, paints, shellacs, varnishes and stains, ammonias, inks, mucilages, battery jars, soap globes, oil dispensing bottles, reservoirs for oil stoves, floats, fire extinguishers and other special items.

ADVANTAGES OF GLASS

The glass container possesses many marketing advantages from the standpoint of the packer and bottler. A few of these advantages are listed below. Their sequence of importance depends upon the product.

1. The glass container is the most sanitary container. Dirt or any foreign substance in the product can be readily detected through such container.

2. The glass container places delicate foods and drinks in the consumer's hands free from all foreign tastes and flavors.

3. The development of automatic machinery makes it easy to pack a product in glass

4. Transparent containers guarantee 100 per cent inspection, thus establishing public confidence.

5. In revealing everything as it is, the glass container gives the packer full credit for his use of high-class raw materials and superior packing methods.

6. The glass container helps sell its contents; it is the "silent salesman."

7. The packer is protected in that if there are any imperfections in the product or mistakes in labeling they can be detected while in his hands.

8. Since color is a potent factor, the transparent glass container packed with a colorful product offers unusual opportunities for the use of attractive, harmonious and sales-pulling labels.

9. The glass container has the best psychological background. From the nursing bottle through childhood to old age, glass stands for purity and sanitation in everybody's mind.

10. The housewife is already sold to the idea of glass for home preserving. Thus, she is a ready prospect for goods marketed in glass.

11. The demand for greater variety of products in glass is rapidly increasing.

12. The glass container lends itself to individuality in size and shape; hence, it is adaptable to many products.

13. Modern glass containers possess great tensile strength, withstand the heavy shocks incident to shipping and handling, and can be subjected to very high temperatures in processing (cooking).

14. Various products can now be vacuum packed in glass.

15. Many glass containers are valued in the home for re-use as pantry jars and for home preserving.

16. The applied color process can be used to fuse the name of the product, the trade mark and other designs into the glass, eliminating labeling if desired.

17. The manufacturers of glass containers and closures are glad to cooperate with the packer. They are squarely behind their product and their customers.

The Glass Container Association of America, 19 West Forty-Fourth St., New York City, is at the service of packers and bottlers requesting information upon glass containers, closures, machinery and equipment and specific bottling problems.

LINING MATERIALS FOR BOXES

LINING assumes as important a role in the makeup of certain packages as the outside covering. A large percentage of boxes are lined with white or tinted papers as well as with gold and silver papers. Suede paper which is lined onto board or else wrapped over the form so that the score lines will not show are also used. Rayon is likewise used on some of the cheaper forms.

A most practical material for box linings is velveteen, frequently miscalled velvet. The difference between the two is a technical one and the average layman does not know the difference between velveteen and velvet.

Velveteen fills a particular lining need in good packaging, especially where a soft cushiony effect is desired, as nothing can quite give the effect of richness as a luxurious velveteen. Many box, case and tray manufacturers have been using velveteens for linings for many years, notably all the nationally known silverware manufacturers, pen and pencil set manufacturers, for perfume boxes, cutlery articles, razor cases, spectacle cases, draughtsmen's materials, toilet articles.

Velveteen comes in widths of 18 in., 22 in., 24 in., 29 in., and 36 in., making for a minimum of waste in cutting, and in a color range of 102 shades. When necessary any other shades can be dyed to match other materials. Velveteen is particularly adaptable to packaging as it is easily handled and may either be tightly stretched or shirred and conforms well to the surface which is being covered.

Perfumes and compacts are generally shown to best advantage in the various champagne shades, whereas shades of old rose, Copen blue and gooseberry are used for manicure sets. Silverware manufacturers incline to the more regal shades of royal blue, though there are the usual variations to meet the individual creations. Silverware trays prepared for the packaging of silverware in individual packages are also being lined with velveteen in shades of burnt orange, special shades of green, Copen blue and grey. For the lining of boxes which hold pearls, greens and turquoise blues are used. For the general run of cheap jewelry display, the predominating colors have been military blue, emerald green and mignon purple. For pen and pencil sets such colors as burnt orange, special Nile greens, as well as crystal grey, are used.

METAL FOIL AS USED IN PACKAGING

METAL FOIL brings to the packaged product two powerful merchandising advantages: display value and protection.

Display Value—The value of foil for decorative and display purposes lies in its highly polished and permanently brilliant real metal surface. No color or combination of colors can equal the flash of sparkling silver or gold foil for power to *attract* and *hold* the human eye.

Protection—A long list of perishable and semi-perishable articles have for many years found foil indispensable for protecting and preserving their original quality and freshness. Butter, candy, cheese, chewing gum, chocolate, cigarettes, meat loaf, sausage, soap, tobacco and yeast, are some of the products that have employed foil year after year, and secured excellent protection. Foil, being made of real sheet metal, is the most perfect protection against the influences that spoil product quality, flavor or freshness. Aluminum foil is light-proof, guarding all products containing oils or fats against the action of rancidity which is accelerated by light. Further, it is an excellent insulating material, possessing the power to reflect 95 per cent of all radiated heat. In addition to its powers to stop heat and light, foil is moisture-proof, grease-proof and odor-free.

Foil is made from (*a*) pure tin; (*b*) aluminum; (*c*) composition of tin and lead. Each foil packaged product uses one of these three types, depending upon the nature and form of the material packaged.

Much useful progress has been made in the development of various combinations of foil with other materials. It is now satisfactorily combined with waxed papers, parchment, glassine, bond papers, manila papers, etc., by means of glue mounting, glue-line mounting, wax mounting and asphalt mounting. By this means paper materials are reinforced and the advantages of foil display or protection added. For example, parchment backed foil is used for lining tea cartons, and as a wrapping for butter and cheese. Meat loaf is packaged in foil backed with waxed paper.

Among the new developments in foil is the combination of it with paper to form a stock suitable for labels and box-wraps. The foil is firmly bonded to the paper, and is in this form practical for many unusual printed and embossed effects.

Another development is a foil lining for paper cans and canisters. The paper backing of the foil is adhered to the inside of the paper can, thus forming a combination metal-paper container which can be used for many oily and greasy products for which a paper can was previously impractical.

Along similar lines foil-lined and foil-surfaced cartons have been developed. The foil is bonded to boxboard of suitable gauge and fashioned into folding cartons of unusual beauty and display value.

Foil in its various forms may be color-printed by any of the standard processes: letter-press, lithography, intaglio or rotogravure. It is not to be handled the same as paper, since its real metal surface is non-absorbing. Surface drying inks are used; these are obtainable from any of the better ink manufacturers. Printers who are unaccustomed to this style of printing, or who are undertaking their first foil printing jobs, will find the foil manufacturers willing and eager to advise or cooperate with them in solving any problems with which they may be confronted. Foil, being a pliable metal, embosses or debosses handsomely through the use of the customary dies and processes.

Foil is obtainable in shiny or satin silver and gold; also in a wide range of colors, printed and embossed designs, plain or lacquered finish. It can be purchased in sheets, or continuous rolls for automatic packaging equipment.

THE COMMON USES AND GRADES OF FOIL

Commodity	Backing	Adhesive
Box covers	Soft paper	Solid glue
Chocolate bars	No backing	....
Chewing gum	Waxed paper	Wax
Candy bars	Waxed paper	Wax
Candy mints	None (plain foil)	....
Cartons	Paper board	Asphalt or glue
Tea	With and without paper	....
Cakes	Waxed paper	Wax
Cheese	Plain or transparent paper backed	If paper backed, wax or cement
Yeast	None (plain foil)	....
Ice cream bars	Waxed paper	Wax
Cut tobacco	Waxed paper	Wax
Cigarettes	Bond paper	Glue lined
Box covers	Bond paper	Asphalt or colorless adhesive
Box liners	Plain or paper-backed	If paper backed, glue lined
Soap	Waxed paper	Wax
Photo films	Waxed paper	Wax
Corsage stems	None (plain foil)	....
Bottlenecks	Tissue paper, if any	Cement, if tissue paper backed
Bottlecap liners	Plain or paper backed	If paper backed, colorless cement
Window decoration	Plain or paper backed	If paper backed, asphalt or glue
Butter wrappers	Paper	Cement
Meat wrappers	Waxed paper	Wax
Gift wrappers	Bond paper	Asphalt
Typewriter ribbons	Wax paper	Wax
Bonbon cups	None (plain foil)	....
Labels	Bond paper	Colorless cement
Vanity boxes	None (plain foil)	....
Milk bottle caps	None (plain foil)	....
Frozen food packages	Bond paper	Asphalt
Chocolate buds	None (plain foil)	....
Insert for transparent wrapper	Wax paper	Wax
Liners or covering for paper cans	Plain or paper backed	If paper backed, usually asphalt

TRANSPARENT CELLULOSE WRAPPING MATERIALS

by Harold A. Levey

ONE of science's outstanding contributions to the art of wrapping is the completely transparent cellulose sheeting available to the present market. While all of us can recall seeing thin gelatin sheeting on packages as far back as we can remember, it was only until a year or so before the World War that we saw a completely transparent form of cellulose sheeting. The nature of the demand for the transparent wrapping fairly parallels that of the glass container in accordance with such phrases as "See what you are buying." However, it offers decorative possibilities not within the scope of the glass container. Its adaptability, due to its extremely flexible nature, makes this possible. Its capacity to be colored, embossed, printed upon and satisfactorily bonded together, substantially augments its other properties.

The first type of transparent cellulose sheeting which met with ready acceptance as a general wrapping was composed of viscose or regenerated cellulose.[1,2] This material is completely transparent and colorless, is slightly hygroscopic, neither water- nor moisture-proof, non-inflammable (but burns), grease- and oil-proof, and is the lowest priced completely transparent sheeting obtainable on today's market. It is affected to a degree by differences in atmospheric conditions, more particularly humidity changes. It can be obtained in colors and embossed designs. The non-moisture-proof form is not used as a food wrapping in direct contact with food products possessing a high moisture content. Its most extensive application is that of an outer wrapping for nearly every type of commodity of such size as can be readily enclosed within its standard size of sheet dimensions, and the price and profit margin of the article permitting its use. Its relatively low price, together with its ease of sealing and workability in automatic equipment, has extended its use to almost limitless fields.

A relatively new type of sheeting which has recently found its place on the American market as a general wrapping is that which is composed of cellulose acetate.[3,4,5] This material is inherently water-proof, and oil- and grease-proof. It possesses an unusually high degree of clarity, brilliancy and surface sheen. It is practically unaffected by atmospheric conditions and humidity changes. It is not attacked by insects nor mold, can be obtained in colors, is readily printed upon and embossed, as well as quickly cemented. Its properties can be so varied that the same material can be made into sheeting which has striking rigidity, or can be prepared so that it possesses the flexibility of rubber sheeting. Its moisture transmission values can be controlled within definite limits, so that it may be readily applied to almost any type of wrapping, including direct contact with the food products which it encloses. As it is not affected by humidity changes, it is effectively used as a covering for the windows of envelopes and window cartons.

In order to overcome some of the shortcomings of the viscose or regenerated cellulose sheeting, more particularly to render it moisture-proof, this type of cellulose sheeting is coated with a thin film formed from a nitro-cellulose lacquer containing resins, plasticizers and waxes.[6,7] The resulting sheet is essentially moisture-, oil- and grease-proof, of greater strength and increased inflammability. While it is not completely water-proof, it is highly resistant to the transmission or penetration of moisture. This treatment reduces its sensitiveness to humidity changes and increases its resistance to the attack of insects and the growth of mold.

Because of the moisture resistance offered by this coating, this type of sheeting is invariably used where the wrapping must come into direct contact with the food products, and especially when it is desired that the original moisture content in that food or similar commodity be retained for a fairly long time. This applies particularly to such material as confections, baked foods and tobacco products, whose moisture content must not be lost; while crackers and related materials must not take up moisture. Even though this type of sheeting costs over one-third more than the uncoated sheet, the volume used of this coated sheeting is about three times that of the uncoated sheet. Obviously, its resistance to moisture, as well as its ability to maintain the moisture content of wrapped materials in almost the same state as when they left the manufacturer, appears to more than offset its increased cost.

All of the above types of sheeting are practically odorless and tasteless, and can be formed into an almost gas-tight enclosure, one of these[7] possessing sufficient thermoplastic properties to make a satisfactory "heat seal" to bond sheet to sheet by the application of a moderate amount of heat and pressure. This property enables these types of sheetings to form a package which will retain nearly all of the original odor and flavor of the product.

[1] Cellophane; Du Pont Cellophane Company, New York.
[2] Sylphrap; Sylvania Industrial Corporation, New York.
[3] Inceloid; American Products Manufacturing Company, New Orleans, La.
[4] Protectoid; Celluloid Corporation, Newark, N. J.
[5] Kodapak; Eastman Kodak Company, Rochester, N. Y.
[6] Moisture-proof Cellophane; Du Pont Cellophane Company, New York.
[7] Moisture-proof Sylphrap; Sylvania Industrial Corporation, New York.

A new development in transparent sheeting[7] has recently appeared on this market which possesses the property of filtering out the ultra violet rays or active elements of daylight. These rays are largely responsible for the spoilage of many forms of food products and cosmetics, which prematurely become rancid or lose their odor, flavor or color when exposed to natural light. This form of sheeting is clear and transparent and is obtainable in the standard form of viscose sheeting, as well as the coated or moisture-proofed product. Where a greater degree of opacity to these detrimental light rays is desired, this type of sheeting is available in an amber shade, and will preserve such wrapped products for a longer period than the above described colorless sheeting.

Papers have not yet been prepared in any modified or treated form which has resulted in a sheet that could be considered completely transparent, that is a transparency comparable with that of water, or of glass, or which when held up to the light would not diffuse the light source. As a result these types of papers appear in varying degrees of translucency. Properties and uses of the various types of wet and dry waxed paper, glassines, waxed glassines, vegetable parchments and the like are of course already well known to the packaging industry. There are, however, types of resin-treated papers[8,9] which have an unusually high degree of translucency approaching transparency. They have good moisture transmission resistance, and are practically oil- and grease-proof for the limited period of time for which they are used as a food wrapping. Like all treated papers, as well as all the other sheeting mentioned in this article, these last-named products are air-tight and dust-tight. They are immune from insects and mold growths. Their inflammability is slightly greater than that of the untreated paper. The cost of this form is intermediate between that of a good grade of waxed glassine and regular viscose sheeting.

Modern trends have been decidedly in the direction of the completely transparent wrapping, and of these there is a preponderance of favor toward the moisture-proofed types, notwithstanding their substantial increase in cost. These situations indicate clearly that the desideratum is to make the wrapped object completely visible as well as to reach the consumer in practically the same condition as when it left the manufacturer. Such conditions demand a form of sheeting, which shall itself be invisible and at the same time possess a high order of protective value. It must include such properties as water-, oil- and grease-proofness, and dust- and air-proofness, a high resistance to moisture transmission, good tensile strength and flexure value, together with a retention of these properties over a substantial period of time. It must be available in colors, capable of being readily printed upon and embossed, easily and quickly cemented, as well as being readily adapted for machine operation.

While the moisture-proof viscose sheetings have, in general, most of these desirable properties, they have, however, many shortcomings. They are a laminated composite sheet, the surface coating which renders them moisture-proof having a thickness of only .0001 in. While moisture transmission resistant, these sheetings are not completely waterproof. On immersion, or sufficiently long contact with water, the protective coating can be detached.

Probably the ultimate line of development will consist of a homogeneous sheet made from a base of cellulose acetate, or some similar derivative of cellulose, properly modified or treated to render it moisture transmission resistant. Cellulose acetate and related derivatives are inherently water-proof, and when their moisture transmission is improved (as the resulting sheet is homogeneous throughout), and not subject to humidity changes, there will be no formation of crinkles, etc. This formation is particularly noticeable when both the coated and uncoated viscose sheetings are used as window coverings for cartons and the like. The cellulose derivative type of sheeting in addition to possessing a high degree of transparency, even to ultra-violet light, is very slow burning. Stability and longevity, freedom from discoloration and resistance to the disintegrating effects of the elements are properties of substantial worth possessed by the cellulose derivative types of sheeting. The cost must be low, in order that it may be used to wrap even the lowest priced articles. However, this usually results when a large market prevails.

Transparent sheeting has become the most accepted type. It is always associated with quality products and low-priced commodities invariably give publicity to the fact that they are enclosed in a transparent wrapper, thus using this feature as a selling point.

Relief effects are now obtained by embossing and printing which in many cases have eliminated at least one wrapping and resulted in a package of more attractive design and greater utility. Owing to the complete transparency of this sheeting, only the printing is visible and appears to be a part of the object wrapped.

Gummed transparent sheeting is now available, both clear and in colors. It can also be supplied printed upon and embossed. Printed and cut-to-shape seals and closures are now fabricated which effectively serve the purpose of sealing and labeling or marking such packages. It also designates the strategic point at which the wrapping might be most readily opened. The clear and colored transparent gummed tape is used in many manually wrapped packages as a time saver and results in a more striking wrapping. The clear, transparent gummed tape is by far the best product for making

[8] S. W. Weis, 182 No. La Salle St., Chicago, Ill.
[9] Transpara; Transpara Paper Company, Rhinelander, Wis.

an invisible repair on torn paper or fabric.

As transparent sheeting possesses unusual strength for its thickness, the sealing of packages so wrapped and sealed can be opened only with difficulty. To overcome this situation some manufacturers leave a part of one flap turned up at the closure. Others enclose a small strip or narrow ribbon of a thicker variety of the sheeting in another color which projects out at the joint in the wrapping. By pulling on this strip the end of the wrapping is as readily removed as the opening of an envelope or package by the pulling of an enclosed thread.

As binding tape, transparent cellulose sheeting finds use when folded into a tube with lapped joint and then pressed flat. It may be obtained in clear or in colors as well as with an inserted core of other materials as metallic foils and paper or fabric containing printed matter.

TYPES OF GLAZED AND FANCY PAPERS

THE following definitions apply to the various types and kinds of glazed and fancy papers and to various terms used in connection with their sale and use.

Bodystock: The kind of paper, such as rag, sulphite, kraft and ground wood, which is coated, embossed, etc.

Brush Finished: Papers which after calendering are further polished in a machine which thoroughly brushes the surface.

Cloth-lined: Paper and cloth pasted and pressed together into a single sheet of material. Used for paper collars, envelopes, tags, children's books, etc.

Coated, Fancy: Papers with fancy effects produced upon the coating machine instead of by printing or embossing. This is done by many means, such as spraying, spattering, mottling, felt blocks, moving brushes, etc. There may be one or several colors used and the finished paper may have a regular design or it may consist of a fancy effect without a design which repeats itself.

Embossed, Heat: Papers to whose coated surface has been applied a heated roller with a design, the raised portions of which, coming in contact with the coated surface, cause a change in the shade of color.

Embossed, Friction: Papers which have a pattern pressed into them. The raised portion usually appears on the front surface.

Embossed, Print: An embossed paper which has ink in the embossing pattern.

Embossing Designs—Common: There are around 100 embossing designs commonly used, such as basket, skytogen, etc.

Embossing Designs—Exclusive: There are several hundred different embossing designs, in addition to the common ones, which have been originated or purchased by individual manufacturers who thereby own these designs exclusively. Such designs are frequently protected by registration at the United States Patent Office. Most manufacturers do not desire to copy others' designs, preferring to have exclusive designs of their own. The Glazed and Fancy Paper Manufacturers' Association, 95 State St., Springfield, Mass., maintains a registration bureau of these designs for the protection of its members and to answer inquiries from customers and users. They are glad to tell users where a particular design may be obtained.

Fabric Designs: Printed designs, in imitation of various fabrics, commonly known as "fabric prints." Embossing design in imitation of fabrics such as rep, linen, etc.

Flint: A coated paper, white or colored, finished by rubbing with flint stones, thereby producing a very shiny surface.

Flock: Papers coated with flock which is finely powdered wool, cotton or silk are called velour or suede and are differentiated by prefixing the name of the kind of flock used, such as cotton velour, silk velour or wool velour.

Friction Glazed: Coated papers that are finished in a friction calender which produces a highly polished surface as a result of the rotary action of a steel roller.

Gold Papers: Coated with metallic substances which look like gold.

Holly: Papers with a printed or embossed holly design.

Intaglio Printed: Papers printed with the intaglio printing roller which has the pattern cut into the roller and transfers the ink from these depressed places to form the printed pattern on the paper. The amount of ink transferred is controlled by the depth of the cut-in portion on the roller; in this way some parts of the pattern have more or less ink and thereby produce the printed pattern in varying shades of the same color. This cannot be done with a surface printing or wall paper machine. According to Webster this word is pronounced in-tal′-yo, the "tal" as in "tallow."

Leather Grain: Papers with leather grain designs which are either produced by printing or embossing. Common examples are alligator, Persian lamb, etc.

Marble Agate: Papers with a design imitating polished colored marble. The design is sometimes a printed design but true marble agate papers are made by floating coloring materials on a viscous bath. Usually a small quantity of an extract made

from ox liver is mixed with the colors in order to facilitate their distribution. The design is then created by combining the colors on the surface of this bath with a wooden comb or the fingers. After the pattern has been made on this bath the floating materials are transferred by contact to the paper.

Metallics: Papers coated or covered with such metals and in such a manner as to give the luster of metals. Bronze powder and aluminum powder are used chiefly for metallic papers made by the coating process; pyroxylin mixtures are also used to make metallic coated papers. *Half Fine Metallic* papers are produced by laying patches about five inches square of a thin copper or aluminum alloy on paper which has been coated with an adhesive. The patches are allowed to overlap so as to form a continuous metallic surface and the overlapping edges are brushed to remove any surplus. *Foil* papers are produced by the application to paper of a continuous sheet of metallic foil, usually tinfoil, zinc or their alloys. The foil is adhered to the paper by the use of some adhesive. These are the real foil papers; imitation foil papers are made by coating processes as defined under the term tinfoil.

Mica: Papers whose coating material includes small particles of mica which give a sparkling appearance.

Moiré: The name of a large class of embossing patterns which, after the manner of textiles of the same name, give a mottled or watered appearance.

Multi-Color: Papers coated, or originally made, with many colors mottled or blended into a fancy effect.

Non-fading: Papers that resist fading when exposed to sunlight. Some colors fade more than others.

Pastel: Subdued color shades.

Pearl: The well-known and very beautiful mother-of-pearl paper. The paper is coated by a special process with certain salts and then so treated that a crystallization process occurs which develops the mother-of-pearl design. This is a French manufacturer's product. American companies produce the same results with pyroxylin.

Plate: Coated papers finished in a stack calender which produces a dull finish by means of pressure.

Printing Designs: Some designs are common designs, that is, common to the industry and obtainable from many different manufacturers. Other designs have been created or purchased by one manufacturer only, and frequently registered by them in the United States Patent Office. These are called exclusive designs. The office of the Glazed and Fancy Paper Manufacturers' Association maintains a file of members' samples for use in answering inquiries as to the source of any desired printed design.

Pyroxylin Coated: Papers that have been coated with a pyroxylin solution as a finish.

Ream: 500 sheets is commonly used instead of the 480 which we learned in school. The standard size is 20 in. × 26 in. because these papers are most frequently sold in 26 in. rolls.

Sateen: Another name for mica papers.

Rolls: A roll usually contains from three to four reams of the lighter weight papers, 17 lbs. to 25 lbs., heavier papers having fewer reams per roll.

Skytogen: A large class of embossing designs consisting of many small raised portions in no particular pattern. They are supposed to represent the background formed by a cloudless sky.

Silver: Papers coated with metallic substances which look like silver, sometimes called aluminum argentine or platinum papers.

Suede: Another name for velour or flock paper.

Surface Printed: A fancy paper on which a pattern in colors has been printed by direct transfer of ink from raised portions of printing rollers.

Swirl: Designs, both printed and embossed, which consist largely of circular lines.

Tarnishing: Discoloration of metallic papers caused by chemical action from contact or vapors.

Tinfoil: A paper coated on one or both sides to imitate tinfoil.

Tissues, Fancy: Tissue paper upon which has been printed a fancy design. Frequently, it is embossed with another design. Largely used for envelope linings.

Trade Mark Designs: Trade marks printed or embossed on the paper.

Velours: Another name for flock papers. Sometimes the term "velour" is applied to imitation leather papers.

Water-proof: Papers whose coating material includes such ingredients that the surface becomes to a large extent non-absorbent of water.

Weight: The weight per ream on a basis of 500 sheets, 20 in. × 24 in., of the bodystock.

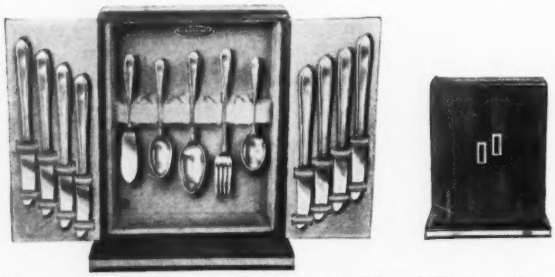
Wood Grain: Printed papers with designs imitating various wood grains.

Considerable delay is caused by customers sending in an order for a certain number of reams of a certain color. Such an order does not state what size ream they desire, what kind of paper is wanted for a bodystock or what kind of finish is needed. Orders for paper should state the quantity; whether in rolls or sheets; size of rolls or sheets; manufacturer's sample number if possible; otherwise full details regarding the color, finish and bodystock. There are many shades of most colors, hence, to say that a red is desired is not specific enough. A sample of the paper desired covers the need if the sample is large enough; this sample should be $8\frac{1}{2}$ in. × 11 in. if possible; a sample $\frac{1}{2}$ in. × 3 in. is so small that the weight of the bodystock cannot be determined.

PACKAGING WITH FANCY WOODEN BOXES

by E. H. Bergin

IN the development of modern packages, wooden boxes play an important part. A new realization of the possibilities of this type of container has spurred manufacturers on to greater accomplishments and with many successful packages to their credit. Wooden boxes are no longer considered too expensive for packaging various products. The beauty and usefulness of the container, plus the added impetus given the sale



Silverware display chest used by Holmes & Edwards Division of the International Silver Company. Shown in open display (at left with merchandise) and closed positions

of the merchandise packed, has removed many obstacles that previously had hindered their use.

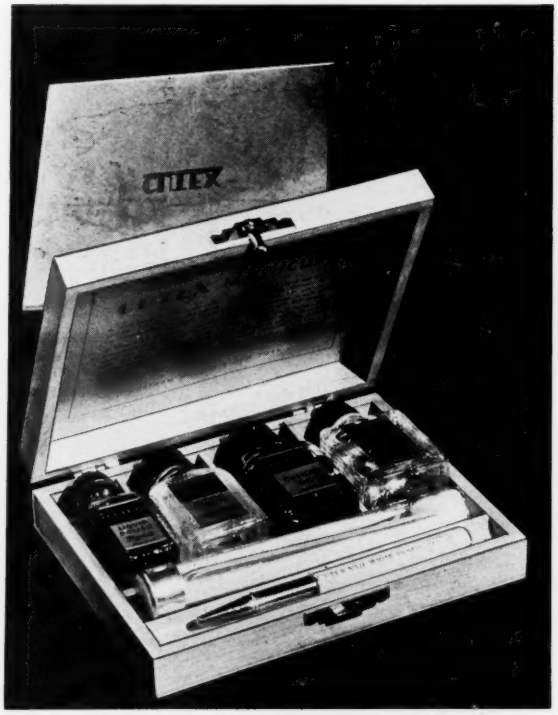
The type of box to use, the style of exterior and interior refinement to select must be determined by the package user to fit the particular job that the package must do. It has its function as a display case in the dealer's hands. It acts as a carrier of merchandise from the point of manufacture to the consumer's hands. After these functions, what? Is it made to fit some particular use in the home or office after the merchandise is used?

Two types of materials are used in the basic construction of the box: solid lumber or veneers. These, plus finishing, lining materials and decorations of various kinds, make possible the beautiful and useful creations that are now finding a place in so many lines of merchandise. If solid lumber is used, a selection is found among cedar, gumwood, maple, redwood, mahogany, poplar, basswood, butternut (white walnut) and genuine walnut. If veneers are preferred, a popular selection is from plain or knotty aspen, pepperwood, birdseye maple, curley maple, figured mahogany, ebonized maple, burl walnut, white maple, fir, cedar, walnut, figured gum, and from the rare woods such as satin-wood, Coco Bola, Brazilian rosewood, zebra wood, harewood, macawood, tigerwood, holly, tubinga, avodire and others.

Maple has been a popular wood. It is doubtful if any other wood lends itself to such a wide variety of finishes or adapts itself so readily to any color scheme in home furnishing. The figure of maple is almost as varied as its uses; ranging from the dainty birdseye to the more pretentious fiddle-back and the wider and more prominent curley figure as well as the blistered and quilted figure. Being light in color it can be finished natural by use of colorless finishing materials or made a delicate amber by applying a thin coat of orange shellac under a coat of pale varnish or lacquer. It can be stained to match any desired color scheme in various shades of pink, gray or brown. There are as many as forty different transparent stains available for use on this wood without in the least degree obliterating the finest figure. The development of these finishes has contributed much to the present popularity of this wood.

Maple veneer is hard, durable and reasonably free from warping and easily worked by machines that are kept in top condition. It is less likely to check than many of the porous woods. Being hard and free from pores, it is one of the easiest woods on which to produce a beautiful and durable finish.

Wooden boxes made of solid lumber or a combination of both lumber and veneer appear in many new finishes, shapes and with linings suitable for the particular type of merchandise packed. Here finishes play an important part in providing just



Maple veneer box used by Northam-Warren Corporation for Cutex manicure sets. Note metal inset on the cover of this box

what is required for best results. Stains, lacquers and varnish are widely used in many colors or tints. Etched metals in chrome or copper used either on the top or around the base adds richness and diversity to the offering. Redwood is often used for etching or simulated carved wood effects, the soft texture between the grains of the wood when removed by special process adds effectiveness to the design employed.

The interiors of many boxes are left in the natural unfinished wood state. Others are shellaced or lacquered while the great majority are lined with tinted suede, foil or fancy papers, rayon silk, velveteen, satin, rubberized fabrics, cretonnes, duvetyns and plush. For a real luxurious cushioned effect, plush is used. The silverware industry who are large users of fancy wooden boxes, require lining materials impregnated with chemicals that prevent tarnish. Lining colors run to royal blue, American Beauty scarlet, lilac, maroon or wine color and burnt orange and in many cases a combination of satins and velvets. Boxes for comb, brush and mirror sets are usually lined with satin in white or champagne colors.

Many of these beautifully lined silverware chests are so constructed that they act as a display case on dealer's counters like the upright silverware chest shown in the accompanying illustration of The International Silver Company chest. The base of this cabinet is removable so that the consumer detaches and uses the cabinet without the base.

The designing staff of a wooden box manufacturer is an important part of the organization and most factories building merchandising packages are making rapid strides in this field through a thorough analysis of what is required of certain packages and constructing them to perform definite jobs. There are several factors to take into consideration before a wooden package can be started on its way and package users should always keep these thoughts in mind when requesting information.

What is to be packed in the box? How is it to be sold, direct to retailers or through jobbers—mail order houses or other wholesale channels? If to be used as a premium, so state. Inside measurement of the box—width, length, depth of lower part of box and depth of lid? Exterior finish desired, including colors and ornaments, lining of interior, etc.? Quantity to be purchased at one time? What is a desirable price range?

With these facts before the designer or head of the development department the materials can be chosen, the size and shape determined, the decoration scheme selected, then the item is ready to take form in a finished manufactured article.

TYPES AND USES OF TIN PACKAGES AND CANS

by Edmund Hoffman

THE product of the tin container manufacturer is so broad in scope and so diversified in type that only the most standardized classifications can be outlined in the allotted space of even so generously proportioned a publication as this catalog. In addition to thousands of specialty items, the can manufacturing industry supplies containers for hundreds of major products so varied in type and package requirements as aspirin tablets, paint, fruit cake, talcum powder, coffee, shoe polish, tomatoes, cigarettes, oysters, lard, hand soap, lubricating oil, etc. Methods of manufacture and the types of equipment required to produce containers for these products vary as widely as the products themselves.

Tin containers are divided by the manufacturer into two general classifications: (1) Packers' Cans and (2) General Line Containers.

PACKERS' CANS

Packers' cans, also called sanitary cans, are the hermetically sealed containers used for packing processed perishable foods such as vegetables, fruits, fish, meat products, soups, etc. Every one is well acquainted with the standard cylindrical sanitary can commonly used for packing tomatoes, baked beans, salmon, corn or soup. These round cans, made in a wide range of standardized diameters and heights furnished with the design lithographed on the body of the can or in plain tin for paper labeling, represent the bulk of the production of the packers' can factories.

Other types of sanitary cans are the tall oblong style commonly used for packing asparagus, the flat oblong sardine can and the large irregular shaped cans now widely used for packing whole hams and chickens.

GENERAL LINE CONTAINERS

General line cans embrace all of the tin containers other than those for processed food products and are divided into two principal classifications: (1) Liquid Containers; (2) Dry Product Containers.

LIQUID TYPE CONTAINERS

The standard and most widely used of the liquid type containers range from the small oval lubricating oil can to the familiar five gallon square can used for a variety of products. Cans in this group

include those used for paint, varnish, linseed oil, metal polish, syrup, olive oil, alcohol, lubricating oil and a number of chemical products. Liquid containers are made with soldered or compound lined seams and are carefully air tested for leaks. Although containing a dry product, the widely used key opener vacuum coffee can is included in the liquid type classification, for it is made not merely liquid tight but sufficiently tight to hold a high vacuum or interior pressure.

DRY PRODUCT CONTAINERS

In the dry product classification is found the widest diversification of size and type of package ranging from the 1/16-oz. ointment box to the 50-lb. shipping containers for bulk crackers. In this group are included cans for cocoa, tobacco, crackers, spices, aspirin tablets, coffee, cigarettes, talcum powder, tea, candy, baking powder and various dry drugs and chemicals; also an infinite variety of specialties embracing such items as dental bobbins, lunch boxes, vacuum bottle cases, first-aid cabinets, goggle cases, etc.

Dry product containers may be further classified as being (1) seamless or (2) pieced. The seamless box is one in which the body is drawn or pressed into shape from a single piece of tin plate. Many of the smaller containers such as those used for aspirin tablets, laxatives, ointment and shoe polish belong to this classification. Pieced containers are those in which the body and bottom are made of separate pieces of tin plate pieced or seamed together. Most tin containers whether for a roll of 1/2-in. adhesive tape or for five gallons of paint are of the pieced type.

COVERS AND CLOSURES

The final factor in classifying a container is the type of cover or closure used. The regular slip cover, usually seamless, is so well known as to need little description. It may be made with either raw, hemmed or curled edge, is applied and removed by hand and fits over the top of the body of the container loosely or snugly as may be required by the product contained in the can. Covers of this type are used on many of the seamless type boxes as well as on cans for baking powder, tea, candies, cake, crackers, etc. Of similar type but of different function is the friction slip cover. This cover is made to fit the body snugly, is usually applied by machine and is not removable. Such covers are usually fitted with a sifting dredge for spices, a sifting neck for talcum or other toilet powders, or a screw cap for drug and chemical powders.

The hinged cover is also quite generally used on oblong and square dry product containers both large and small. Lugs on both body and cover of such a container are clinched over a piece of wire, thereby joining the two members together. Aspirin boxes, tobacco tins and most of the larger size oblong candy containers are ordinarily provided with hinged type covers.

Still another type of cover for dry products is the slide cover. This is confined almost entirely to small oblong seamless boxes for pills or other small products. Automobile tire valve stems and a variety of proprietary pills and tablets are packed in seamless slide cover boxes.

The compression friction top is a type so generally used that every one is thoroughly familiar with it. Although most commonly associated with round liquid type cans, particularly paint cans and pails, it is used on round, oval, square and oblong containers for both liquid and dry products. Its chief function is as a closure to prevent leakage of liquid or sifting of dry powdered product. There are two types of friction tops; the single friction and the "doubletite." As the name implies, the single friction makes contact between the plug and ring at one point only, whereas the "doubletite" has two separate points of friction contact. A variation of this type of closure is the full opening friction. In this type the top of the can body is not fitted with a seamed ring and the friction plug fits the full opening of the can body.

All processed foods as well as those packed under gas or vacuum are hermetically sealed in cans having both top and bottom ends double seamed to the can body. The processed food cans are opened with a can opener, the contents usually being immediately consumed and the container discarded. In cans of this type no re-closure feature is needed or provided.

The can for products packed under gas or vacuum is furnished with a key for winding off a scored strip circling the body near the top. A separate ring, or collar, of tin is attached to the inside of the top of the can body forming a seat for the slip cover which remains after removal of the scored strip, thus giving these cans a re-closure feature. The vacuum coffee can is an example of this type of container known in the trade as the key collar can.

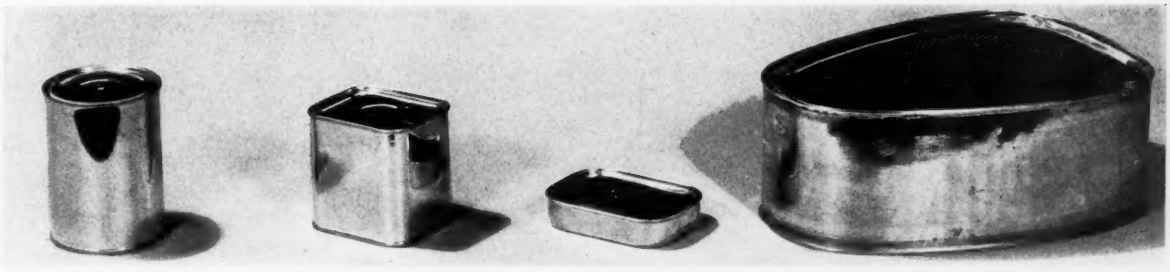
There is also a great variety of liquid type containers made with double seamed tops fitted with nozzles or threaded necks to accommodate various types of closures as detailed elsewhere in this catalog. Cans of this type are used for edible oils, syrups, varnishes, lubricating oils, alcohol and many other liquid products.

TIN PLATE

Tin plate as used in can manufacture consists of a steel base, rolled from bar form into a thin sheet and coated or plated with tin. The unit of measure for tin plate is the "base box" consisting of 112 sheets, 20 in. long by 14 in. wide. Tin plate is first classified as to the weight of the sheets in terms of pounds to the base box. These weights range from 56-lb. (0.00638 in. thick) to 175-lb. (0.1995 in. thick) plate. The larger the container and the heavier the product to be contained, the heavier is the plate

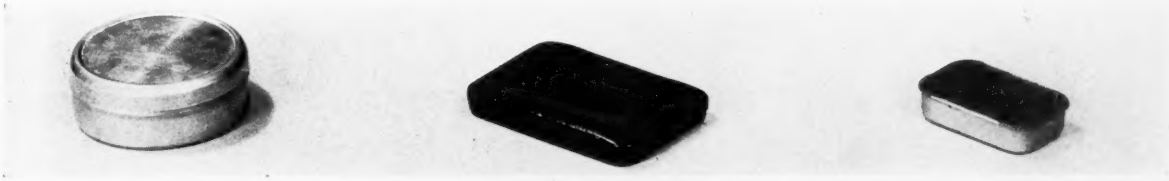
TYPES OF TIN PACKAGES AND CANS

PACKERS' CANS



Left to right: Round, tall, sanitary can for vegetables, fruits, soups, fish and other processed foods; oblong, tall, sanitary can commonly used for asparagus; oblong, flat, sanitary can, sardine type; irregular sanitary can for whole hams and chickens

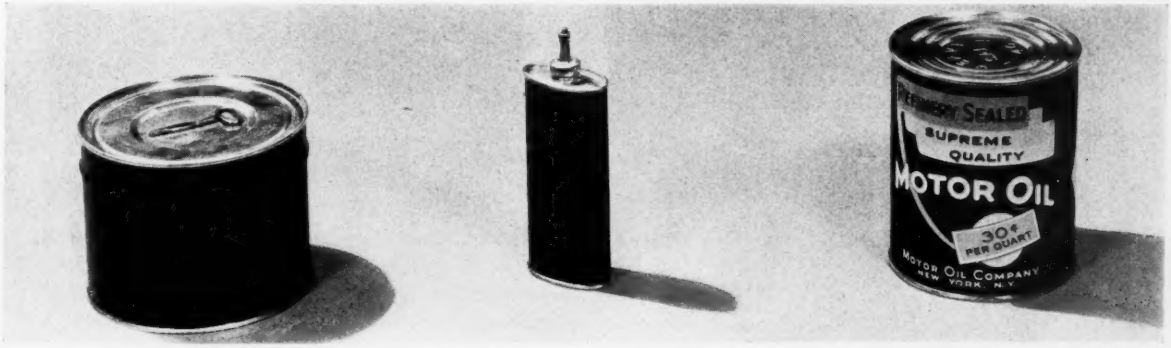
GENERAL LINE CANS—SEAMLESS TYPES



Left to right: Round, seamless, slip cover ointment box; oblong, seamless, hinge cover tablet and pill box; oblong, seamless, slide cover box for tablets, etc.

GENERAL LINE CANS—PIECED CANS—LIQUID TYPE

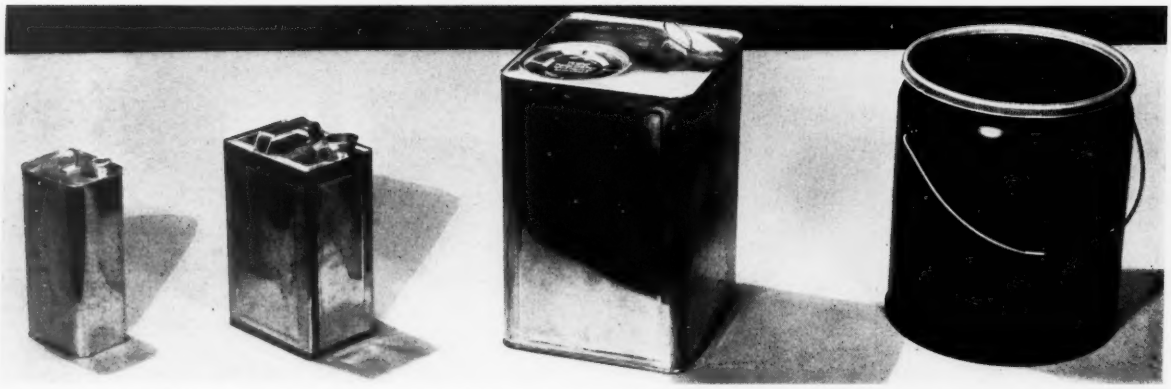
Left to right: Round, pieced pail, with doubletite friction plug and wire bail, widely used for paint; round, pieced pail, with full friction opening and wire bail for oysters, cleaning pastes, etc.; round, pieced can, with single friction plug, for paint and various liquid products; round, pieced can, cone top style with screw neck and cap for metal polish



Left to right: Key collar vacuum can for coffee and dehydrated milk; oval oiler with spring bottom and utility spout for household lubrication; round, pieced, sanitary style, motor oil can for use with special dispenser

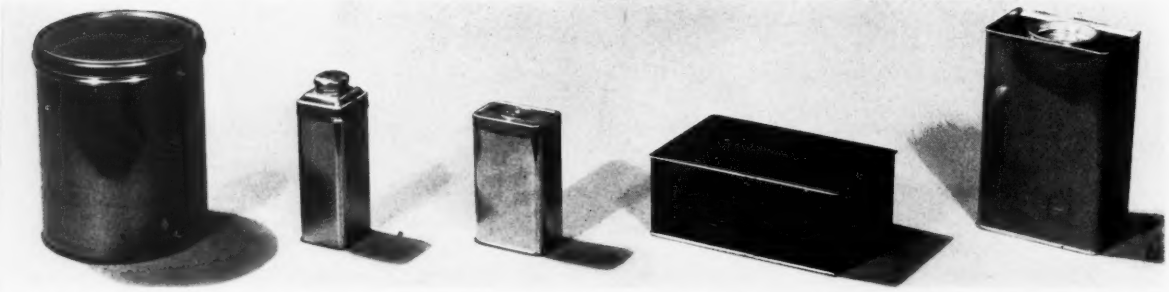
TYPES OF TIN PACKAGES AND CANS *(Continued)*

GENERAL LINE CANS—PIECED CANS—LIQUID TYPE



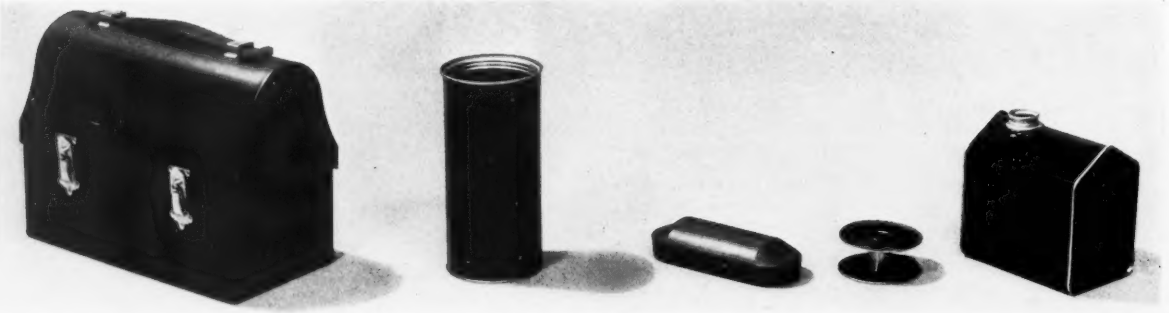
Left to right: Oblong, pieced can, with screw neck and cap and wire ring handle for edible oils, lubricating oils, syrup, etc.; oblong, pieced can, with nozzle and tin handle, for varnish, shellac, etc.; square, pieced, domestic oil can with single friction opening and wire ring handle; round, pieced pail, with ring seal cover and wire bail, for paint

GENERAL LINE CANS—PIECED CANS—DRY PRODUCT TYPE



Left to right: Round, pieced, slip cover can for crackers, etc. Same type in flat style used for cakes and candy; square, pieced, friction slip cover talcum powder can with neck and revolving perforated sifter cap; oblong, pieced, friction slip cover spice can with revolving sifter dredge. Same type with regular slip cover and without dredge used for cocoa. Oblong, pieced, padded hinge cover candy box; square, pieced, single friction top can for powdered drugs and chemicals

GENERAL LINE CANS—SPECIALTIES



Left to right: Lunch kit, made to accommodate vacuum bottle in cover; vacuum bottle holder; goggle case; spools for adhesive tape; irregular shaped syrup can

required for the can. The great majority of cans of average size are made of 90-, 95- and 100-lb. plates. Tin plate is further classified as to the weight or thickness of the tin coating, sheets with light coating being designated as "coke plate" and those with heavier coating as "charcoal plate." There are several grades each of coke and charcoal plates. Coke plate is most extensively used, charcoal plate being required only for cans containing a product embodying an oxidizing agent.

Methods of can manufacture may be broadly classified into four groups: (1) hand made; (2)

single operation; (3) semi-automatic; (4) automatic. Standard cans used by the trade in large volume are made by the automatic or semi-automatic method, whereas non-standard cans of small volume must be made by hand or single operation methods, as the limited volume would not support an expensive automatic line of machinery. For this reason non-standard cans are more costly.

Tin containers may be supplied in plain tin for paper labeling or may be lithographed in any combination of colors from the simplest one color label embodying lettering only, to the complex multi-colored art subjects widely used on tin containers by the confectionery and toilet goods trades. Important advances in methods of lithography on tin have been made in the past few years and many new and effective finishes introduced. Each color of the design is printed separately on the flat sheet of tin plate and baked in a high temperature oven. After the last color is baked on, a protective coating of varnish is applied and baked hard to prevent scratching or marring during manufacture and to preserve the attractive appearance of the finished container.

The actual manufacture of the tin container is only a part of the complete service rendered to the trade by the larger can manufacturers. Expert advice as to type of container and merchandising methods is given by men qualified by years of experience in the container field. Extensive art staffs are maintained to produce designs and to advise with respect to color schemes and all matters pertaining to the decoration of the container. Research laboratories, with staffs of expert chemists, are available for the study of problems of bacteriology, corrosion, product deterioration and all matters pertaining to packaging in tin. A large staff of expert mechanics is maintained and is available at any point throughout the country, day or night, on short notice, for the servicing of can closing machinery in customers' plants.

METAL CONTAINER FINISHING

by Henry F. Frank

MOST industrial products are fabricated in various steps and ways ultimately leading to the final decoration and finishing of the completed product. Lithographed metal containers are finished backward, as it were. The tinplate, aluminum or other material is first given the necessary coating of clear varnish or coating enamel, is then given the decorative lithographic design, and a final varnish treatment. Interspersed are the necessary baking operations. The tin plate in its full glory is then ready for fabrication. Naturally, the protective and decorative finish has to be of an unusual character to withstand this unusual production procedure.

The sheets are coated by means of a roller coating machine. The coating or clear varnish is placed in the well and is fed onto a feeder roll and then a second roll (both of steel) which in turn deposits it on a composition roller. The bottom steel roller has a scraper arrangement to keep the material off the portion of its surface in contact with the sheet being coated. All sheets are coated on one side and then the other. The design is then lithographed over the base color.

The base coating must have good adhesion properties for obvious reasons. The drying qualities must be such that they meet the demands of various heats and drying times in baking ovens. Covering quality must be good for economical production, and have good flowing qualities to obtain the requisite smooth finish. The drawing qualities must be excellent to withstand the subsequent fabrication.

The following are typical constituents (in varying percentages) of a white base coating: Zinc oxide, titanium oxide (either or both), synthetic resins, linseed oil, China-wood oil, mineral spirits.

Strips are cut from large tin plate sheet which has already been sized, coated and varnished. Above: Flat blank and first operation shell cut from strip on a punch press fitted with a combination cutting and drawing die. Below: Operations from left to right are redrawing, trimming and forming. These three steps are performed in one gang press

Baking is necessary for adherence and also to insure that the coatings will stand the drawing operation. Furthermore, the ability to withstand surface abrasion is important. An unusually satisfactory finish on the Karo and Mazola cans of the Corn Products Company has eliminated separators in the shipping cartons, effecting a saving in both carton and labor costs.

The accompanying illustrations show some of the forming operations on various can parts, after finishing. Body, bottoms, breast tops, screw tops, etc., all require special steps. It is also necessary to see that soldered cans are free from finish at the point of soldering. With crimped cans this is unnecessary.

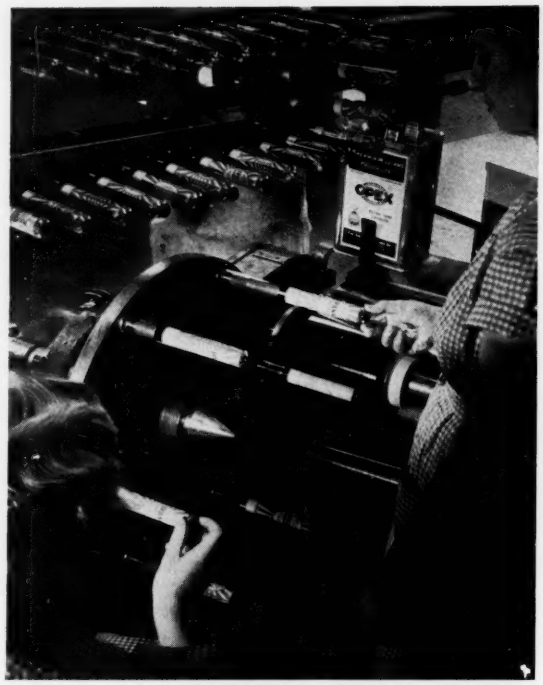
The interior of fruit and vegetable cans requires different types of lacquer coating to withstand the action of the canned products. "C" lacquer, for instance, is for cans containing corn, fish, crabs, lobster, etc., to resist certain acid reactions set up by these substances. The regular "gold" lacquer is necessary for some other fruits and vegetables.

Five gallon pails and lithographed drums are handled in the same way. It is interesting to note that lacquers of the so-called "Sanitary" type have been so successful that their coating values have led to the elimination of wooden packages and paper lined packages. The metal container is protected from the action of the contents and vice versa.

Metal ends for paper containers such as are used in household cleaners, are often finished with an alkali resistant material. Resistance to abrasion is greater in some finishes than others, and this quality has advantageous uses.

There are two types of finishing varnish applied as a final coating, after base coat and lithographing are completed. The ordinary white varnish and also a white processing varnish that has special steam and hot water resistant properties to withstand the severe action in cooking fruit and vegetables, after they are in the can.

Screw caps also offer their individual finishing problems. On liquor closures, for example, alcohol-resisting coatings are necessary. Sanitary lacquers must not impart odor to the material processed.



Ipana toothpaste tubes receiving their final protective coat of protective lacquer. It is this special lacquer which prevents soap, warm water and chemicals in the medicine chest from dissolving or discoloring the finish on the tube. The tube finish must also stand bending and abrasion without chipping or peeling

Certain types of crowns for bottles and salve boxes need white processing varnish overall lithography to resist the action of sterilization. The interiors have "Sanitary" lacquer protection.

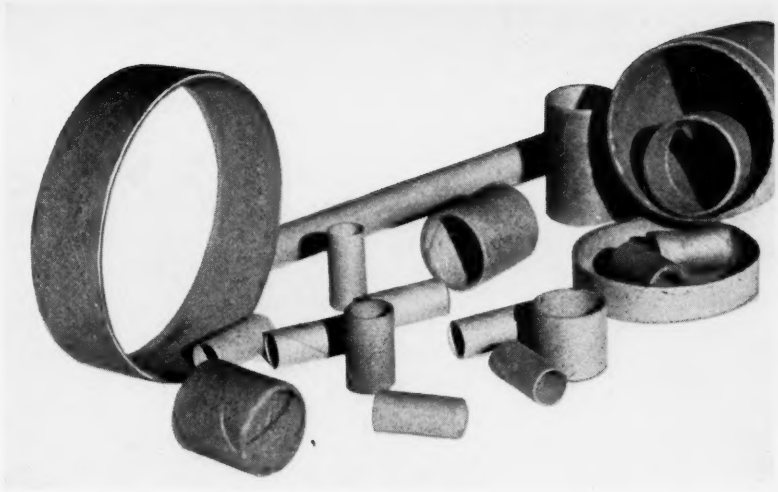
Collapsible tubes are finished after the tube is formed. They are placed on a mandrel and a spinning movement applies the necessary coating. Protection is again an important factor—Ipana Toothpaste tubes, for instance, are coated with alkali-resisting coatings to withstand bathroom and medicine chest contact with soaps and other alkalis.

TYPES AND USES OF PAPER TUBES

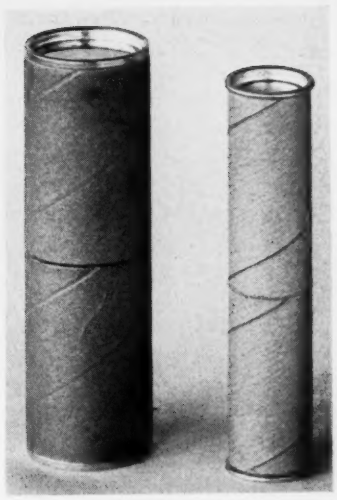
by W. F. Walker

PAPER TUBES are made of any number of different combinations of paper such as kraft, chip and news board, book papers, asbestos and many other types of material. One concern today is putting out tubes made of cloth and sand paper which are formed in the usual way as paper tubes. The diameters run from as low as $^1/_{16}$ in. up to 22 in. and any inside diameter can be held to within .005 in., which allows paper tubes to be used in almost every known field. The thickness can be as low as 0.04 in. up to 1 in. There are two types of tubes manufactured: the spiral wound, which is used most, and the parallel wound. Of the two types the latter is stronger when of equal wall thickness but is usually more expensive.

Tubes made of special dielectric kraft are used



Types of paper tubes, spiral and parallel wound



Paper mailing tubes

for insulation throughout the electrical field and on account of their cheapness have been substituted in a number of cases for phenol resins and even mica. Paper tubes are used as coil forms, condenser containers, light socket liners, candles, etc. In the automobile field tubes are used in a great many places, such as protecting threaded parts in shipping, covering polished parts in dipping, and, of course, in the ignition systems for insulation. A large use for tubes is in the display field where any number of attractive combinations for window dressing can be worked out. About 80 per cent of all spark plugs manufactured have paper tubes in the ends which serve to protect the gap when set.

Another well-known field is that of rubber goods manufacture where tubes and cores are used throughout production. Tubes can be dressed up with attractive papers on the outside and either printed directly on the tube or labelled. The toy manufacturers have many places where tubes are used. On account of the cheapness and the fact that manufacturers are beginning to realize that they have to protect their articles in shipping, paper tubes are being used in more different combinations than ever before and it seems as though their use in any industry is unlimited.

TYPES AND USES OF FIBRE-BODIED CANS

by Arthur H. Grace

THERE is no longer any question as to whether or not a product should be sold in a package but rather there is the question of improving the package for the purpose of creating or increasing the sale of that product. The modern package is a most effective and dependable sales weapon; and it is this trend toward modern, economical packaging that has produced the fibreboard can to meet the demand. Just as the package as a unit of sale has increased in popularity, so has the use of the fibre-bodied can increased proportionately. New and varied can package uses are constantly being introduced until today there is hardly a field in which the fibre-bodied can cannot be used, where the package is a unit of sale.

While usually confined to the packaging of dry products, the fibreboard container also has its place as a temporary container for hot or cold liquids. Generally speaking, there is an unlimited field for the use of fibre-bodied cans in packaging dry products whereas, in the case of liquid products, their use is restricted to temporary purposes only.

To understand correctly the distinction between and the uses of fibre-bodied cans, one must immediately distinguish between the types of can manufactured for dry products and those manufactured for semi-moist or liquid products. Only dry product containers are discussed in this article.

Few manufacturers carry any stock of manufactured cans. Specifications vary; and, where labels are involved, carrying a stock would be particularly impractical. Certain round, all-fibre cans—commercially known as "Drug Packers"—are stocked by some manufacturers in assorted sizes, for standard capacities of drugs and chemicals. However, these so-called "stocks" sizes are not necessarily uniform so far as various manufacturers are concerned. Mail cases for bottled liquids are also stocked by

certain manufacturers, these cases conforming to postal regulations and accommodating standard Rx bottles.

Fibre cans are sometimes called "paper" cans. This is incorrect. While the accurate technical term would be "fibreboard" cans, custom has established "fibre" cans as the accepted nomenclature.

In looking at any packaging problem, so far as fibre-bodied cans are concerned, the cubical capacity of the package having been established, it is necessary to determine the shape of the package which will best serve the purpose—not only from the standpoint of the nature of the product itself but also from the standpoint of shelf display space, label design and style of top. The next step is whether a metal-end can will be required or whether a fibre-end can will serve the purpose equally as well. Custom establishes rather definitely the shapes and sizes required for certain types of products, unless there is a specific desire to vary this established practice. If an all-fibre can is selected, the shape of the can is restricted, from a manufacturing standpoint, to one of two possibilities, either (1) a round-shaped can, or (2) an oval-shaped can. On the other hand, if a metal-end can is decided upon, practically any shape can be manufactured. While the round-shaped container continues to enjoy an immense popularity, practical usage necessitates other shapes, which are gradually being adopted for various products until today one can purchase a fibre-bodied can in almost any shape desired—round, oblong, oval, square, or obround (elliptical)—provided the manufacturer has the necessary body-winding mandrel and dies to construct that particular size and shape.

Few changes of importance have been made recently in the manufacturing processes of fibreboard cans, aside from the fact that speedier and larger machines, capable of producing an increased volume as well as larger sizes of cans, are now available from several manufacturers.

All can bodies are constructed of fibreboard, the kind of board used as well as the point thickness of the body wall being determined by the type of construction desired and also by the nature of the requirements.

Fibreboard is purchased by the can manufacturer in Jumbo rolls, which are slit into so-called "ribbon" widths varying in size from a fraction of an inch to several inches in width. (This width is a manufacturing detail and is governed by the size and the height of the can body.) This fibreboard ribbon is fed automatically onto body-winding mandrel, conforming in size and shape to the customer's requirement, the exact dimensions of this winding mandrel determining the *inside* dimensions of the container, and conforming to the base size and shape of the customer's specifications.

In all cases the height of the can can be adjusted to the individual requirement, subject, of course, to manufacturing facilities available.

To the can body either fibre-drawn caps or metal ends are applied. These two types of ends are not necessarily interchangeable—that is, a manufacturer may be able to supply a fibre-end can in certain sizes whereas, if metal-end cans are required, these same sizes cannot be furnished, due to the fact that construction operations differ. For each can body, winding mandrel cap presses, fitted with drawing rings, are necessary to draw fibre caps for the various sizes of body-winding mandrels, or punch presses, equipped with dies, are required to stamp out metal ends for each mandrel size. Therefore, while it is possible to make a fibre-bodied can in any size specified, unless the manufacturer is equipped with the exact size winding mandrel for the can body and the necessary dies for the particular type of end required, new tools would have to be manufactured before can bodies could be constructed.

Construction of the body being a separate and distinct operation from the construction of the ends (whether fibre or metal), it is necessary to treat each unit of construction separately.

There are four distinct types of body manufacture. Two most common are known as the ribbon method, either (1) spirally or (2) convolutely wound. Two other methods are bodies wound from (3) sheets, as outlined later, and another method adopted from (4) England, a single sheet of fibre board formed into a body. Each type of construction has its own particular merits, and in order to make the necessary distinction, each type will be outlined separately.

CAN BODIES

Spirally wound can bodies are usually manufactured from a fibreboard commonly known as "straw chip." Straw board, straw chip, chip board, news board and test liners are some grades of body stock used as well as manila-lined stock or coated-one-side stock, depending on the customer's specifications or based on the nature of the product to be packaged.

Each can body consists of two or more plies of fibreboard. Each ply being a separate unit permits of variation in the nature of the stock used as well as the caliper point thickness of each ply. Spirally wound cans are usually made from stock ranging in caliper thickness from .008 points to 0.40 points, the total body wall thickness depending on the number of plies of stock in the body and the caliper point thickness of each ply. While manufacture has standardized the usual requirement as to caliper thickness of each ply of board used as well as the number of plies of fibreboard and the total body wall thickness required, all of these may be varied as conditions necessitate. To illustrate: A .024 point body wall can be wound in 3 plies of .008 point body stock, 2 plies of .012 point stock, or 1 ply of .016 point stock and 1 ply of .008 point stock.

Ribbon widths of the fibre used are automatically fed into the winder onto a winding mandrel, the size and shape of which correspond to specifications

TYPES OF FIBRE-BODIED CANS

Top row. Metal ends: Square base, screw cap; oval base, crown turn top; oblong base, perforated top; round base, slip-on cover; round base, perforated top, slip on cap; square base, round friction top

Second row. Fibre tops: Round base, perforated metal top and slip on cap; round base, solid top; round base, slip on cover; round base, spout top

Bottom row. Metal ends: Oblong base, oval friction top; round base, round friction top; round base, full friction top; round base, perforated top; oval base, dredge top; oblong base, dredge top; oblong base, friction top; oblong base, slide dredge top

given. The different plies of fibreboard are wound into a continuous tube form and are held together by the use of various kinds of adhesives. The tubes are then cut to sizes corresponding to the height of the container desired.

Spirally wound can bodies are usually made with a so-called "straight" side wall. Where a slip-on cap is used—either fibre or metal—a recess is sometimes provided at both ends of the body, in order that the cap may fit flush with the can body, permitting of smooth hand or automatic label application. This recess is provided in either one of two ways: (1) Jacketed. A portion of the outer ply of the body wall, about $^1/_2$ in. in width, is stripped off the can body; or (2) Necked in. Both ends of the can body are subjected to pressure, about $^1/_2$ in. in width. Thus a spirally wound can body can be furnished with: (1) A straight wall; (2) a jacketed wall; or (3) a necked-in wall. In no case can the body wall be tapered, as only a *straight side wall* can be furnished in any so-called fibre can. Either fibre-drawn caps or metal ends can be applied to these can bodies.

Convolutely wound cans are made from one single and continuous sheet of fibreboard, cut into ribbon widths equivalent to the height of the can requirement. The nature of this board differs from that used in the construction of spirally wound cans in that the quality is usually of a higher grade and the caliper thickness does not exceed .012 points. The stock generally used is can fibre, each manufacturer having his own grade of special stock for this particular type of construction.

One ply is wound directly upon another and each ply is laminated to the other by various grades of adhesives. The winding mandrel conforms in size and shape to the customer's specifications, only one can body being wound at a time. The different plies of the can body are not interchangeable; the construction is definitely fixed by the nature of the stock used—which stock, however, might be a duplex or a laminated sheet, where special body construction is required.

From a manufacturing standpoint, then, it is more expensive to wind convolute can bodies than spiral can bodies. As mentioned before, a convolutely wound can body can be made in any shape required, whereas a spirally wound can is obtainable in the round and oval shapes only. Also, a convolute can body is more rigid than a spiral body and can be automatically labeled at the time the can body is wound, whereas a spirally wound can body can be labeled automatically only after being filled. As in the case of spiral cans, either fibre-drawn caps or metal ends can be applied to convolute can bodies, fibre ends being restricted to round or oval shapes.

Another method not as general is the sheet method. These bodies are laminated sheets, one ply directly on top of the other. The width of the sheet being determined by the ply wanted. All widths are even plies from 2 to 10 plies. The length of the sheet is determined by the height of the can to be wound. These sheets, plain or printed, after skiving or feathering of one edge, are then pasted on the plain side, all but the first lap, which is unpasted. The sheets are put on a revolving rack and then are wound onto a steel mandrel in any diameters required. From this point on, applying of fibre or metal ends is the same operation as for other can bodies. The skiving process is used so that starch or cold water flour paste can be used instead of prepared or hot glues.

The fourth method originated in England and has been used in a restricted way in this country. Various types of board, plain or printed, of the caliper thickness required for the body wall are fed automatically onto a body forming mandrel much the same as tin can bodies are formed. The ends are sealed together by a fibre or metal strip—a patented process. Ends are applied in the same manner as outlined later for other types of construction. The application of printed labels to this type of body differs from other methods of construction in that printed labels if used must first be applied to the sheet prior to the body forming operation.

Because of the nature of some products, it is necessary to treat the fibre can body to make it moisture-resistant and to make it capable of resisting body penetration. This can be done in two ways: first, through the use of body liners, and, second, through the use of various preparations, both of which afford satisfactory results.

Various kinds of liner papers can be used, the exact stock to be used depending on the requirement. Glassine, parchment (genuine or imitation), greaseproof, kraft, metal foil, and others are used for liners to furnish resistance to body penetration. Gelatin, paraffin, asphalt, rosin, and other similar substances may be used to make the container moisture-resistant. These materials may be used between the plies or may be applied to an individual ply at the time the body is wound. The can bodies may also be treated through other processes, such as dipping, spraying or impregnation of fibre.

While the selection of a spirally wound can may prove a disadvantage because of the restriction to the round or oval shape, a distinct advantage of this type over other methods of manufacture is the fact that various kinds of liner paper can be automatically wound into the can body at the time the cans are manufactured, the liner being applied to the mandrel first and forming the inside ply. In other types of construction the liner must be laminated to the body stock before being wound, the liner encircling the can body the same number of times as there are plies of fibreboard in the can body.

Where body treatment is required, consideration must also be given to treatment of the ends of the container. Fibre ends can be given much the same treatment as fibre bodies, as outlined above; but when metal ends are used treatment is rarely necessary except for special conditions.

CAN ENDS—FIBRE

From a manufacturing standpoint, can bodies fitted with fibre-drawn ends are restricted to two shapes: round and oval.

Fibre ends are drawn from cap stock (so-called) especially made for the purpose. The nature of this stock differs from the body stock and the caliper thickness varies from .020 to .040, the size of the container governing the caliper thickness of the stock used. Cap stock may be obtained in various standard colors.

Caps are drawn under pressure, moisture and heat, the size of the cap conforming to the size of the can body wound. Varying atmospheric conditions tend to affect fibre caps when drawn, unless immediately applied to the container body upon completion of manufacture.

One end is usually glued onto the can body and the other slipped on loosely, to be replaced after the container is filled. An identifying mark on the can body usually indicates which end has been glued on.

Fibre caps may be embossed when drawn with various designs of embossing, where embossing dies have been made. When body treatment is required, it is usually necessary to treat the fibre caps also. As has been previously stated, this may be done in much the same manner and method as described under the body treatment. Caps may be lined with various types of paper to afford resistance to penetration by laminating the liner to the cap stock before the caps are drawn; or caps may be treated with paraffin, gelatin, rosin, asphalt, and other preparations to secure moisture resistance.

CAN ENDS—METAL

Sheet metal is cut into ribbon widths from standard or special sheet sizes, the sheet size conforming to the ribbon width required and advantageously cut from the full sheet.

Metal ends are stamped out of the ribbon widths in sizes to fit the can body, one end usually being seamed on (or crimped on) to the body. The other end is shipped separately, to be slipped on or seamed on after the product is packed.

Metal ends are usually made from tin plate, which may be plain, coated, or lacquered, one side or two sides, depending on the appearance desired. Metal ends can be embossed, where dies are made, at the time of stamping out.

Where large quantities of cans are involved, seaming machines are usually furnished to the customer by the manufacturer, on a yearly contract rental basis. Where small quantities are involved and both ends are to be seamed on (closed), a small friction opening is left in the bottom of the can, through which the can is filled and the opening closed by a metal plug—which operation is performed after the container is filled.

Because of the nature of the product packed, some metal-end containers must be sanitary-lacquered inside. This protection can be given, where required.

FITTINGS

The use of fibre-end cans is also restricted in that few types of fittings can be furnished with a fibre top. Aside from a solid top, the most commonly used fibre-end can is the spout top as on a salt can. A perforated top or a perforated undercap can be supplied as well as a metal plug top; however, their usage is quite limited.

Various types of fittings have been devised for metal-end cans, certain fittings being standard for certain types of products.

LABELS AND WRAPPERS

The question of when and how the can is to be labeled should receive attention when consideration is being given to the type of construction desired or required. For obvious reasons, practically without exception, all labels are furnished by the customer but are made up in accordance with specifications furnished by the manufacturer. Laminated can bodies cannot be printed or lithographed.

Decorative papers can be used as wrappers for the outside ply of spirally wound cans. These papers are usually furnished in roll form, are slit to ribbon widths and are applied to the can body in continuous form when the ribbon method is used.

Printed labels for spirally wound cans, when supplied by the customer and applied by the manufacturer, may be machine or hand applied—either singly or in strips. When in strips, the labels are applied to the tube form after the body is rolled but before the ends are put on. The number of labels to the strip is determined by the number of can bodies wound in tube form at one time.

Recent developments permit of automatic machine application of single labels to spiral wound can bodies. Printed labels can be automatically applied to cans after filling—which operation is advantageous in the case of certain types of cans—and particularly so when the same type of can is used for packaging a number of different products.

Convolutely wound cans can be automatically labeled at the time the can body is wound. Whether a decorative or printed label is used is immaterial so long as the nature of the stock does not conflict with manufacturing specifications. Labels for cans of the convolute type of construction are furnished singly, cut to size.

The paper stock used for labels in all cases should conform to a uniform basic weight, not heavier than 25 × 38–60-lb. stock, and ungummed. Coated-one-side litho label or any plain finished book paper will serve the purpose.

Separate labels for the sheet method or English method are applied to the fibre board before the body winding operations either singly or in sheets depend-

ing upon the type of construction. Any design or color may be used in printing labels. They may be plain or varnished, just as long as the size and specifications conform to the manufacturer's layout, which will be furnished without charge.

PACKING AND SHIPPING

Local freight shipments necessitate cans being packed in standard fibre shipping containers, varying in size to accommodate the wide range of sizes and styles manufactured. The number of cans packed in each container varies although, generally speaking, large-sized—in some cases, over-sized—containers are used because of the light weight involved. Naturally the smaller the number of cans packed to a container, the larger the number of shipping containers required—which increases packing costs.

Sometimes a special container pack is required. For example, where it is necessary to pack for reshipment. This operation involves special containers. In carload shipments, cans can be packed in fibre shipping containers, but the most economical way is to pack in large heavy kraft paper bags.

The time required for the manufacture of cans varies with different manufacturers. Generally speaking, a week or ten days is sufficient time to produce any order—although there are cases when a longer period of time may be essential.

EMBOSSING FOR PACKAGES

THE art of embossing is in the hands of the artist who is creating the design. He is the one to determine the elements of the design to be embossed. It often happens that designs are over-embossed, as, for example, when it is left to the discretion of the die-cutter. In some instances, such as in the preparation of a beautiful Mazarin chest, when we are copying the sculpture of a creation of the 12th Century—a solid gold chest—it would be quite necessary to emboss all of the detail. This replica of the Mazarin chest is now being used by Schrafft's and is known as the Gold Chest.

There are no set rules as to how a die should be engraved or chiseled. It depends solely upon the feeling of the artist. The art of embossing is to emphasize the particular motif of the design, to bring out such eye appeal as scroll work and lettering; in other words, emphasizing the very important features in a design. Dies are usually cut in brass, but for the unusual and difficult embossing effects, steel should be used.

Regarding the depth of the engraving of the die, it depends entirely on the thickness of the paper that one desires to emboss. The paper should be of a flexible long fibre nature with sufficient strength and resiliency to retain the embossed impression. By the use of heavy paper, embossing of greater depth and detail may be used. When embossing goes beyond the normal strength of paper, it is often necessary to moisten the material desired embossed; and with a drying process, the beautiful embossing is retained.

The machine for obtaining the best results for embossing paper requires the minimum pressure of at least ten tons and a very slow dwelling impression is quite important. Speed is one thing that must be eliminated, as a fast impression will not effectively bring about the desired results.

In summarizing, embossing requires first, the vision of the artist; second, the skilled workmanship of the die-cutter and third, the proper equipment and skilled workmanship.

APPLICATION OF RAISED PRINTING

TWO years ago the Virkotype process of raised printing was introduced to the packaging field in a limited way. Since that time, without the benefit of intensive effort, this process has extended rapidly and now many nationally known and advertised products are packaged in boxes with Virkotype wraps.

This process offers many advantages to those seeking unique effects and arresting eye appeal for their products, whether these be produced in quantity or in small runs. The process is extremely simple, being merely a continuation of the printing operation. Sheets are printed in the regular manner on any type of press and by extension delivery are run into the process machine and are there automatically processed, resulting in distinctive embossed effects of raised printing.

These embossed effects have a real advantage over die embossing. Besides exceptional brilliancy, Virkotyping will not chip or crack in folding, and cannot be easily removed from the sheet by scratching or friction. No special plates or dies are required as the effects desired are obtained from regular type or line cuts. Any color or metallic shade in raised printing may be combined with any number of flat printed colors. The raised printing process is applied merely as one more impression in the printing operation.

Automatic process machines are available at reasonable cost in various sizes, the largest of which handle a sheet 26 in. wide and of any desired length.

To manufacturers desirous of packaging so that the display of the packaged product on the counter or shelf arrests the eye and concentrates attention of the potential customer, the brilliancy and distinctive embossed effects attainable with Virkotype raised printing have a particular appeal. Firms specializing in the production of Virkotyped box wraps are located throughout the country, and many of them have available a complete service of design for those interested in improving the appearance of their containers.

SPECIAL AND FANCY PAPER BAGS

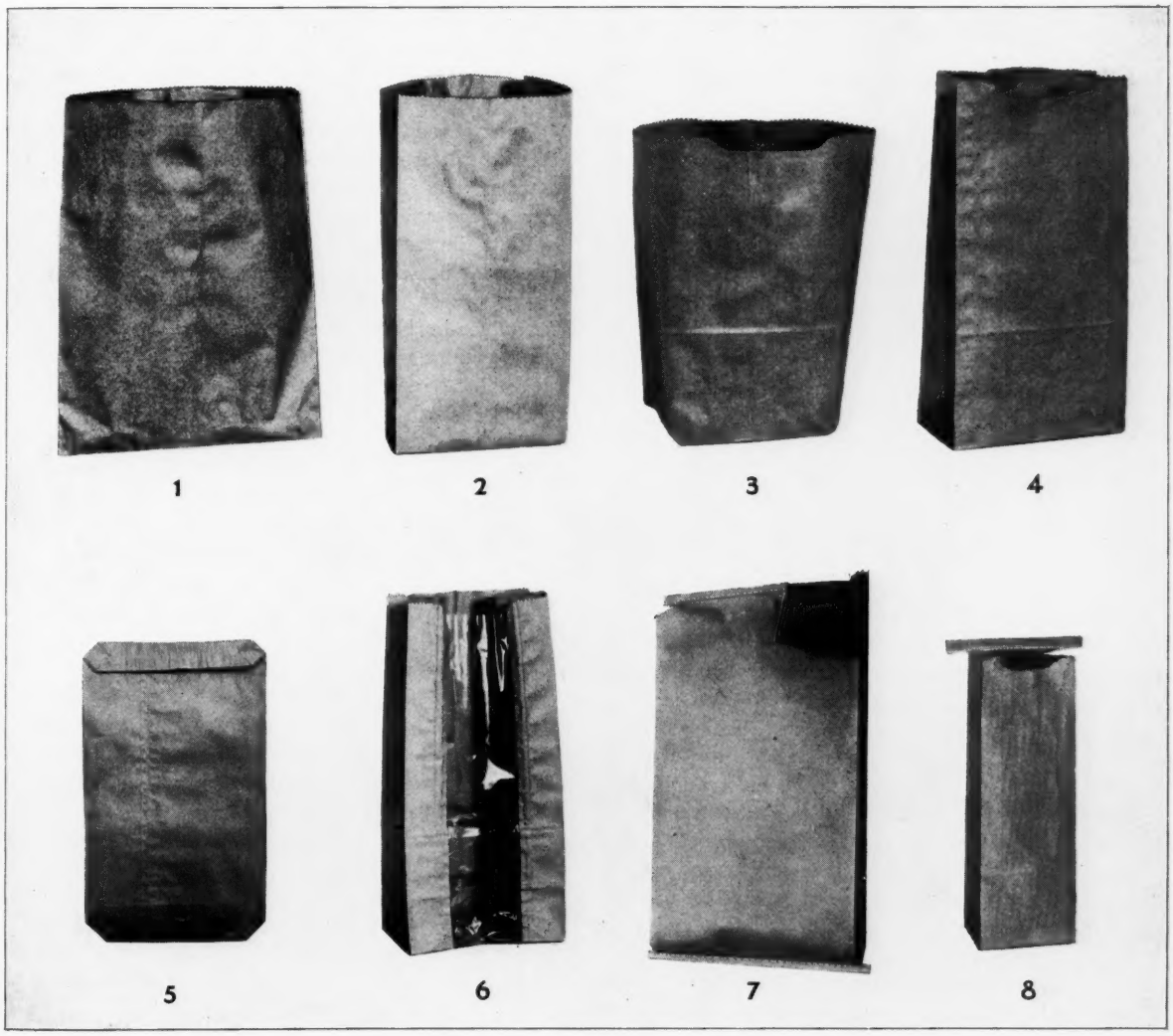
by H. S. Daniels

LIKE every other style of container, special bags have practical limits to the fields in which they may be used. But their convenience and economy is steadily extending the boundaries of those fields, and each month sees a special bag being developed for some product that has never before considered a "paper bag" as a possible package. The improvement in range, styles, materials and printing facilities available in special bags has naturally done much to widen these fields.

There are four major services that a special, made-to-order paper bag is well adapted to perform:

1. An attractive, *economical*, retail package.
2. A protective covering—sometimes an insulation.
3. A measure, or convenience unit.
4. A means of identification for products not easily trade-marked or branded upon themselves.

Any manufacturer who has one of these four problems to contend with may well investigate the possibilities of *a tailor-made* bag to give him the most economical answer. It is seldom that the four groups are drawn sharply; usually a special bag combines several of these services at the same time.



GENERAL STYLES OF PAPER BAGS

1. Flat bag with straight plain bottom. 2. Square bag opened with bottom formed. 3. Satchel bottom bag. 4. Automatic shape bag. 5. Valve bag, pasted top and bottom. 6. Combined bag, automatic shape. Transparent cellulose and kraft. 7. Valve bag sewn top and bottom. 8. Automatic shape with tin-tie closure.

The package that is needed as a measure, for example, can increase sales by being designed as an attractive retail package, and can protect the contents against deterioration by having a waxed or glassine liner. Nor do these four groups represent the entire range of special bag uses, by any means. But they are the most common requirements that have created made-to-order bags, and as such, a few examples may be of interest.

Retail Packages: The trend toward smaller kitchens and less pantry shelf-room in our homes naturally results in a demand for smaller, prepacked units of many products formerly sold in bulk, or in large packages. Flour, coffee, rice, sugar, etc., are all going into smaller and smaller packages. Recently the "10-cent size" has gained much popularity. Attractively printed, *duplex* fancy bags offer the ideal means of adding much smaller units.

In the chemical field, insecticides, fungicides, paints (calsomine and dry colors), cleaning powders, patching plaster, etc., have all adopted a retail household-size unit.

Protection: Dry goods and textiles, such as shirts, blankets, gloves, diaper cloths, etc., are protected from soilage until the purchaser himself breaks open the package. The elimination of shopworn "seconds" more than pays for such protection, without considering the added prestige and sales-incentive that individual wrapping always gives to any product. Top-quality fork, hoe and axe handles, canoe paddles and baseball bats also use special bag protection against soilage—and combine this protection with the opportunity for trade mark identification and display. Two outstanding examples of the *insulation* service are (1) the bag used to cover blocks of dry ice (which is too cold to touch with the bare hands) and (2) the duplex asphalt paper bag liner for egg cases which, by retaining the CO_2 gas in the case, so helps to preserve the freshness that eggs so packed bring from one to four cents a dozen premium in the markets where official grading is required. Still another form of protection is the wax-lined bag in which your laundry returns the "damp dry" portion of your wash—the bag retaining the moisture until it is convenient to iron the pieces.

Measure: In the drug and chemical fields, particularly, paper bags have been designed to serve as exact measures for contents that must be mixed before using. An example of this is the insecticide bag, where the amount of the contents is in exactly the right proportion for a given amount of water, and it is only necessary to break the entire bag into whatever quantity of water the directions (printed on the bag) call for. Another very popular "measure" use is the coffee bag for restaurant trade. The bag is designed in the proper size for a given blend of coffee so that the whole bag may be dumped into the tall nickel urn full of water.

Identification: Maybe you have purchased a wrench lately and wondered where it got any protection from being packed in a special paper bag. But while you were wondering that, you were reading the trade mark of that particular wrench, and possibly some advertising matter that was printed on the bag. Paint brushes and cooking utensils are other examples of products that do not provide surfaces suitable to trade mark or advertising printing, and so are packed in special printed bags.

More necessary from a practical standpoint is the special bag that has been developed for containing and identifying machine parts. Sturdy kraft bags, equipped with a tin-tie (which permits repeated opening and sealing) and printed with the name or number of the part they contain, are saving time and loss in the assembly plants and service stations of most of the large automobile companies today.

The foregoing is in no sense an attempt to cover the field of special paper bag uses. It touches only a few scattered examples in an attempt to illustrate the very fact that these uses are extremely widespread. Probably your particular product hasn't been mentioned, but it is entirely possible that a special paper bag has been worked out for that product, and is today being used.

In any event, the rapid development of bag making and printing equipment, and the knowledge that a special bag is generally much less expensive than any other form of container, makes it advisable for any merchant to call in a special bag engineer who knows his business, and let him go over his packing set-up. The bag engineer knows better than to recommend a bag where it won't do the work, and he may know of a type of bag that will do it at considerable saving over present methods.

ARTIFICAL LEATHER FOR BOXES

THE material known as artificial leather offers a medium for covering boxes which allows for many and varied effects. This is a standardized material, the base of which may be either cotton fabric or latex saturated paper. To either of these base materials, a coating of pyroxylin is added. Usually, the artificial leather is grained with leather grains or other designs and may be furnished in more than one color. When other colors are added to the base color, this is known as an overtone and is laid on so that it shows only in the low spots of the grain, thus imparting a two-tone leather effect.

Artificial leather, because of its pyroxylin coating, is waterproof and can be washed; therefore, making it practically stain-proof. Being tough and pliable, it can be deeply embossed, making it the ideal wrap for de luxe or gift boxes where it is possible to simulate the appearance of leather cases, treasure chests, Venetian art work or bound volumes.

Boxes covered with artificial leather, naturally, are more expensive than ordinary paper covered ones but because of their rich appearance and wearing qualities are kept for other uses.

STYLES AND USES OF TRANSPARENT BAGS

by Gordon H. Friend

TRANSPARENT packages within the course of a few years have exercised a powerful influence upon the merchandising methods of many products. In some cases it has changed the very fundamentals of retail selling and opened new outlets for products where old markets had long ago reached the saturation point.

In the beginning, transparent bags met with stubborn resistance in every new field—always because of price; but one by one the butchers and the bakers capitulated to the new idea, only to find that the extra cost meant nothing. Mark-ups were adjusted to cover the additional costs, and still sales would frequently double and even treble.

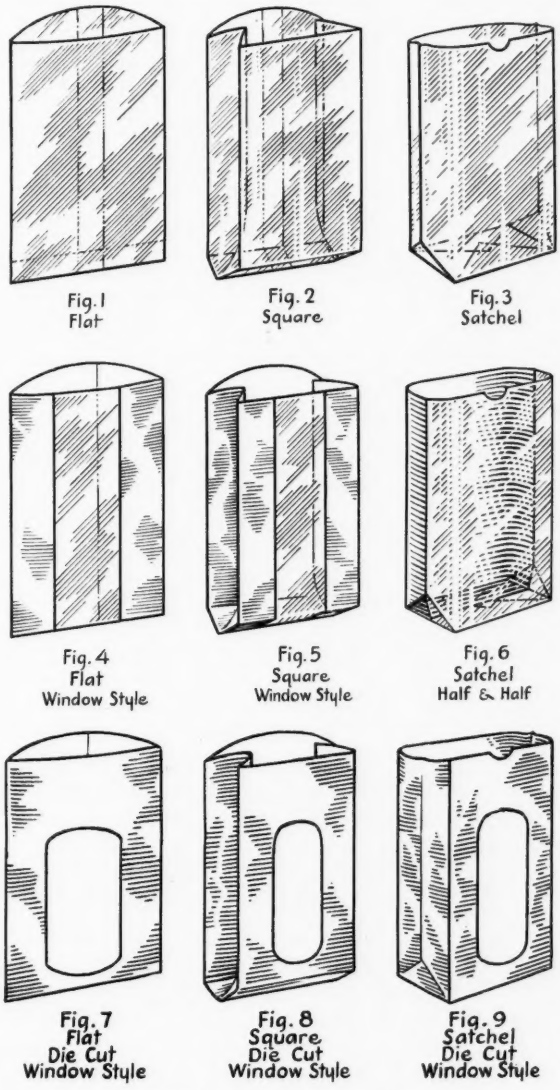


Fig. 1 Flat
Fig. 2 Square
Fig. 3 Satchel
Fig. 4 Flat Window Style
Fig. 5 Square Window Style
Fig. 6 Satchel Half & Half
Fig. 7 Flat Die Cut Window Style
Fig. 8 Square Die Cut Window Style
Fig. 9 Satchel Die Cut Window Style

General types of transparent bags

With the steadily increasing use of transparent wrappings came the overwhelming demand for printed cellulose bags made to fit special requirements. New printing presses were designed to handle this material; bag making equipment was redesigned and rebuilt; bag filling and closing methods were changed. Step by step these problems have been met and solved. Especially during the past year much progress has been made in overcoming the limitations of printing and converting transparent cellulose into bags. Likewise production managers have discovered new methods of more rapidly and economically filling and closing these packages, and as a result of these new developments, more and more manufacturers are finding a bag to be the practical package for an increasing variety of commodities.

Transparent bags are divided into three major style classifications: flat, square and satchel bottom. Figs. 1, 2 and 3 illustrate these styles. Each of these three styles may be again divided into two subclassifications: full transparent (a bag made entirely of cellulose) and window style (a paper bag having a strip of cellulose inlaid on the face of the package). The materials used may be plain, moistureproof or heat sealing transparent cellulose.

Flat bags and bags with tucks are available in an almost endless variety of styles and shapes, ranging in size from a flat bag small enough to contain an aspirin tablet, to a square bag large enough to package a woolen blanket. They may be made of a single sheet of cellulose either plain or moistureproof, or they may be double-walled (duplex). They may be printed in any size and from one color on the face only to four colors in an all-over pattern.

Satchel bottom bags are used extensively by confectioners for packing bulk items, candies, nuts, etc. They are especially desirable for packaging dry groceries; rice, beans, peas, dried fruits and countless other bulks. Among the miscellaneous items packed in satchel bottom bags we find such products as grass seed, sea shells, cigar clippings and doughnuts. The outstanding advantage of the satchel bottom bag is its flat bottom, enabling the package to stand upright when packed.

Cardboard inserts are frequently used to give added rigidity and shape to the top and bottom of the package. Gummed seals are then applied to both ends to lend a finishing touch to its appearance. Until recently it has been necessary to insert these cardboards by hand at the time of packing; however, cellulose satchel bottom bags are now available with "built-in" cardboard bottoms.

The idea of making double walled or duplex bags is an old one, but has been applied to transparent

bags only within the past year or two, due to manufacturing difficulties.

The use of duplex bags has arisen almost entirely through a requirement for additional protective qualities. It has, therefore, found wide favor, particularly among packers of food products. In many cases, however, the packer specifies the cheaper plain cellulose for the outer sheet—a maneuver which almost defeats itself where protection is the object. The unusual hygroscopic characteristics of plain cellulose may cause shrinkage or expansion which will spoil the appearance of such a bag. To get the full benefit of a duplex bag, both sheets should be moistureproof cellulose. Secondarily, the need for extra strength has promoted the use of duplex bags.

Flat bags are seldom made duplex because they are invariably used for packaging small light articles.

Square bags and satchel bottom bags lend themselves readily to duplexing. The construction of these packages permits the manufacturer to print on the inside surface of the outside sheet—a procedure producing a lustrous effect which cannot be matched by any other method of printing.

Another minor point in favor of duplex bags is their superior rigidity. This in many cases speeds up packing, handling, and enhances the value of the bag as a display piece.

Combination or window bags continue to expand their field of usefulness where visibility and economy are essential requisites. There are countless papers that may be fabricated with transparent cellulose and converted into bags in any of the three major styles. Moistureproof papers are used with moistureproof cellulose to give complete moistureproof qualities to the finished package. Likewise ordinary papers are used with plain transparent material where keeping qualities are not important. The width of the window may vary from a narrow strip of cellulose in the center of a bag to a wide strip spanning the entire front. It is sometimes extended to cover the front and sides providing only a narrow strip of paper which serves as the extreme back of the bag or package.

Bags of the window type lend themselves beautifully to printing. Unusual and striking effects may be obtained by using brilliantly colored papers and contrasting inks for printing. Window bags are preferred by many packers not only as a measure of economy, but because they are easily opened and filled, and because less care is required in storage to keep them in good condition.

Printing on cellulose bags is no longer in the experimental stage. It is possible as well as practical to print on cellulose anything that one might expect to obtain on ordinary paper, in color combinations up to four colors, and with the use of process plates and inks, the possibilities are extended to compare with the full color pages of present-day magazines.

Automatic bag filling equipment has reached a new level in perfection. Filling machines are now available for every type of bag, production in bag filling equipment reaching as high as 120 bags per minute.

PROPERTIES AND USES OF TEXTILE BAGS

THE term "textile bags", as the name implies, refers to bags made from textile or woven cloth of one kind or another and is used to distinguish such bags from bags made of paper. Textile bags may be made from any kind of woven material, although practically all are made from cotton or burlap goods.

Textile bags are peculiarly appropriate for packaging certain commodities, just as bottles, collapsible metal tubes, cans and cartons have fields they are particularly fitted by their nature to serve. Textile bags are particularly adapted for use as containers for powder and granular products, such as flour, sugar, table salt, ice cream salt, soap chips and powder and various chemicals. They are also used to advantage in packing vegetables such as beans, rice, potatoes and onions.

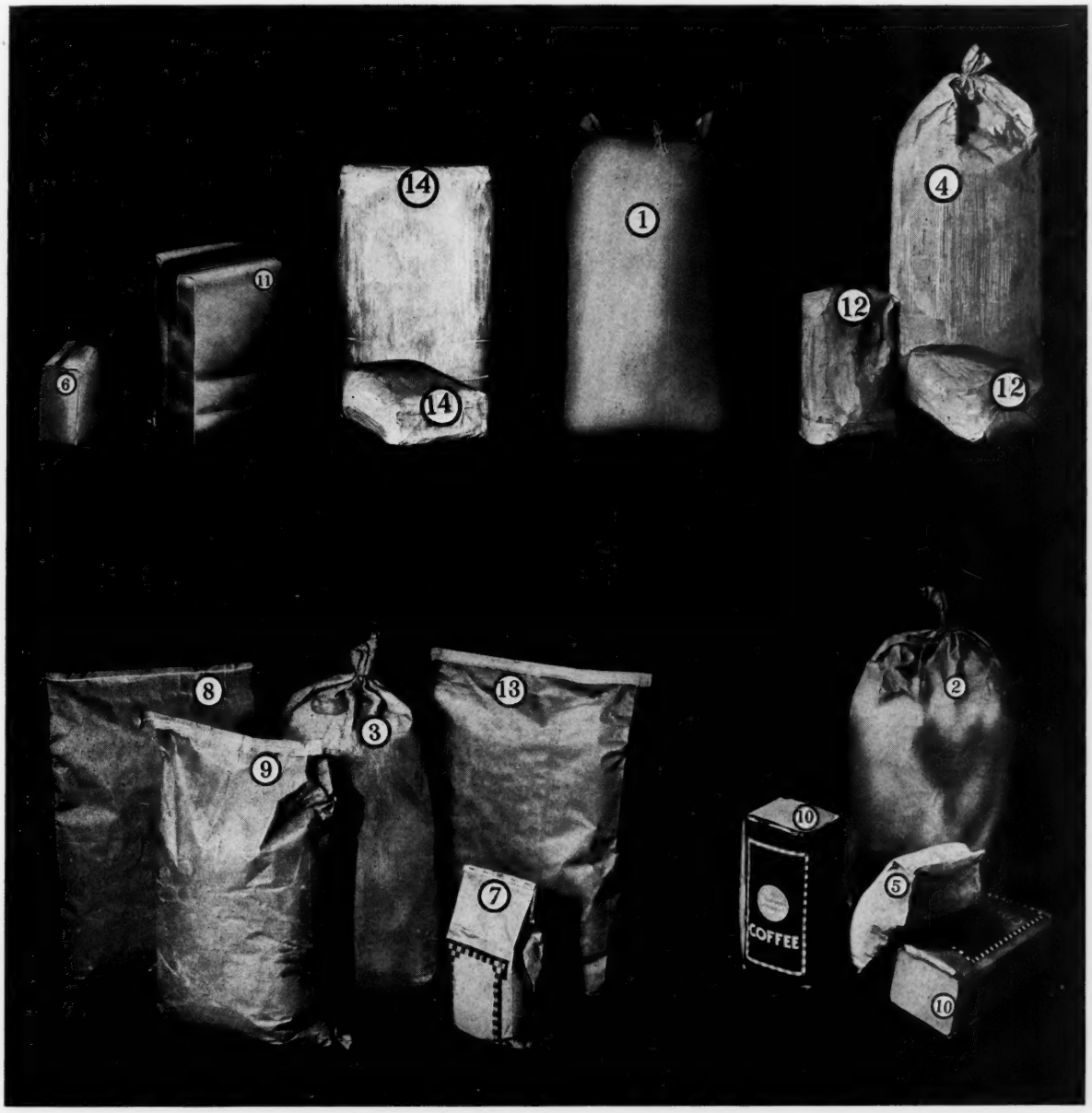
Advertising value: Brands, trade marks, and other advertising matter may be printed on textile bags in various bright colors in a similar manner as is done on other types of containers.

Textile bags light in weight, yet strong: Textile bags are light in weight compared with most containers, and this means a saving in tare weight on every shipment, thus effecting a permanent saving in freight charges. In spite of the light weight they are amply strong to carry the contents safely to their ultimate destination.

Textile bags flexible: Due to the soft cloth from which bags are made they are flexible and adapt their shape to the place in which they are stored. They pack together compactly, saving valuable storage space. The maximum amount of goods may be stored in the minimum amount of space. Empty bags require little storage space as they are bundled in compressed bales.

Textile bags have utility after being emptied: Cotton bags when used as containers for retail packages appeal to housewives, as the sturdy piece of white cotton cloth of which the bags are made may be used as a dish towel, dust cloth or vegetable bag. Burlap bags always have a good salvage value, as they can be used again for packing commodities of low cost not requiring new containers.

TYPES OF BAG CLOSURES



1. Hand Sewed (thread). Used only on textile bags. Not tamperproof.
2. Hand Tied (string). Used on both paper and textile bags. Not tamperproof.
3. Wire Tied. Use on both paper and textile bags. Requires use of a hand tool to apply.
4. Hamer Closure. Used on both paper and textile bags. Requires machine to apply metal ring clamped around bag.
5. Metal Tie (folded). Used principally on paper bags. Usually applied by hand.
6. Metal Clip (crimped). Used only on paper bags, especially transparent cellulose or similar thin grades. Requires tool to apply.
7. Wire Stapled. Used only on paper bags. Requires machine to apply.
8. Machine Sewed. Used on both paper and textile bags. Requires machine to apply. Tamperproof.
9. Bates Valve. Used principally on paper bags. Bag closed before filling, machine required to put commodity into bag through valve opening.
10. Hesser Seal. Used only for paper packages. Formed from flat sheet by special machine into bag, which is filled and closed by folding open end and sealing with label pasted over folded end.
11. Allison Seal. Used only on paper bags. Requires machine to apply.
12. Delta Seal. Used only on paper bags. Requires machine to apply.
13. Duvall Closure. Used only on paper bags, especially large sizes with multiwall. Requires machine to apply. In combination with machine sewed snake stitch this closure is stronger than the walls of the bag.
14. No. 83 Closure. Used only on paper bags, especially small sizes. Requires machine to apply.

TYPES AND USES OF COLLAPSIBLE METAL TUBES

by Frederic Remington

NO important changes took place in the collapsible tube field during the current year which would essentially change the value of this important container used in hundreds of diverse packaging lines.

With strong tendencies toward Government legislation of capacities being clearly marked on containers, the collapsible tube steps into its own as a truly "honest container." The ultimate consumer buying a collapsible tube receives exactly what the eye shows once the tube is taken out of the carton as it is impossible to pad up the size of a tube beyond that which is apparent to the eye. This is one of the greatest values in selection of this container by those manufacturers who are forward-looking to the extent of believing that Governmental control may insist upon elimination of false capacities on packages.

The stimulation of such contests as those held by MODERN PACKAGING in the Annual All-America Package Competitions has produced a number of new and excellent designs for the collapsible tube industry and modernization of old tubes is continuing at a very satisfactory rate for both tube purchaser and tube manufacturer.

It is particularly interesting to note the simplicity of the newer tube designs and the elimination of endless amounts of reading matter which formerly appeared in the directions panel of collapsible tubes. This is proof that the manufacturers of tubed products are convinced that the public seldom takes the pains to analyze the directions printed on tubes or cartons. The shorter and more pertinent directions and reading matter are more easily and quickly read and are far more effective than the complicated

Collapsible metal tubes with metal and molded closures. Courtesy, Peerless Tube Company

The Collapsible Tube Manufacturers' Association have a complete list of standards of weight, wall thickness and shoulder thickness for the benefit of the entire trade and these standards are in general use. In addition to this there will be a tendency to standardize on neck sizes and cap sizes, etc.

The users of clipless closures have increased and the trend toward the use of pyroxylin lacquers or protective coatings has shown a still further use to the extent that such finishes have practically superseded the so-called alkali proof varnishes.

instructions which are seldom followed by the user.

Practically all new tubes designed are without directions, these being incorporated in the design and the entire effectiveness being brought to the fore of the design itself.

New food products show increased sales in collapsible tubes and are slowly but surely calling public attention to the use of collapsible metal tubes in this field. If sales statistics could only be published of such products in tubes, unquestionably the American trend would be as great as the

European, where today over 125 food products are packed in collapsible tubes.

Almost any type of decoration can be placed on a collapsible tube and the reproduction of accurate color effects can be held in large quantity runs, and basically this work can be done up to four colors and with ten or eleven shades resultant from screen work if desired. Great strides have been made in the development of resistance for protection against alkalies and other materials which might attack the enamel on the tube and more striking colors are being used in the modernization of tube designs.

A classification of collapsible metal tubes may be summarized as follows:

1. Pure tin tubes, made of new virgin tin, alloyed with a small amount of copper or other suitable stiffener, in minute quantities. No adulterant such as lead or other soft metals is used in these tubes and they are essentially for use for any product going on or in the human body.

2. Aluminum tubes, admirably adapted for uses similar to tin, with the additional advantage of extremely light weight. A slightly stiffer tube than tin and normally competitive or a trifle cheaper than tin. Aluminum tubes require some research in the adaption to certain products, particularly those containing alkalies, but in general they cover the same field as tin tubes.

3. Lead tubes, known as lead alloy tubes, made of pure lead with antimony or tin and antimony, and chiefly used for adhesives, shoe creams, rubber cements and articles where the contents will not be used on the human body.

4. Tincoated tubes, having a lead alloy base with an even distribution of thin coating of tin on the inside and the outside, made in such a manner that the two metals cannot be separated. These are the heaviest weight tubes and seem to be declining in volume steadily in the collapsible tube field to the substitution of the other three types, as their scrap value is exceptionally low to the tube manufacturer and the final appearance is not as good as pure tin or aluminum.

Standards of manufacture and tolerances are being held to closer limits than ever before by the manufacturers, and quality is the outstanding watchword in the entire industry today. With increasing facilities for prompt delivery the purchasers of collapsible tubes are more than ever assured of prompt service of a high quality package.

Particularly for the benefit of new users, to the previously published summaries should be added that the average public is familiar with collapsible tubes and knows how to handle them, and that their steadily increasing production indicates constantly growing favor.

CELLULOSE DERIVATIVE CONTAINERS

THE use of seamless cellulose derivative containers has increased during the past year. Several nationally advertised products are now packaged in this manner. These containers are manufactured in clear transparent, tinted transparent and in all shades and colors, including metallic effects. Vials, bottles, collapsible tubes and many specialties are being produced. The

Types of seamless cellulose derivative containers, with and without threads for closures. Right: a "Puffer" tube

"Puffer" tube for dispensing powders in a fine spray has been adopted by several makers of deodorant and talcum powders.

Where breakage presents a serious problem or hazard, these non-shatterable containers and specialties become extremely important. Their use for vaginal or feminine hygiene applicators, in which field they have been almost universally adopted, illustrates this point. The high lustre and brilliant color effects which are possible with these containers make them distinctive for packaging "luxury" items. Cosmetic manufacturers have found them useful because of their distinctive characteristics.

Industrial manufacturers are using them in increasing numbers for the packaging of small repair parts where transparency and non-breakability are important. This field is rapidly expanding. Insurance companies find great advantage in the use of cellulosic containers for specimens because of the lower mailing costs made possible by their use.

These featherweight containers may be decorated in the same manner and extent as is possible with collapsible metal tubes. Most unusual effects can be obtained by such decoration. This eliminates the necessity for labels and thus reduces packing costs. The use of containers of this type is expanding rapidly and has become an important factor in the packaging field.

MOLDED PLASTICS IN THE PACKAGING FIELD

THE place that modern synthetic plastics occupy in packaging today is a large one, and these versatile materials have definitely established themselves as basic packing materials along with paper, wood, glass, metal, etc. They should be used not necessarily as substitutes but as new materials, possessing new properties and possibilities and offering a wide opportunity for merchandising ideas.

Molded synthetic plastics comprise several groups of compounds with varied characteristics, differing in textures, translucency, depth of color, etc. To the layman, however, all look more or less alike, and are considered as a single group.

Plastic materials made by an increasing number of manufacturers in the compound field here and abroad may be classified in three general groups: phenol-formaldehyde plastics, urea-formaldehyde plastics, celluloid or cellulose acetate.

PHENOLIC PLASTICS

PHENOLIC plastic compounds are of chemical foundation and are molded or formed under heat and pressure, the manufacturers supplying material in a powdered form to those equipped to make it into the finished closure, jar or box by what is known as the hot press molding system. This work is done by organizations specializing in molding and known to the trade as custom molders. Up to the present time, no manufacturer using phenolic materials in packaging has attempted to do his own molding, which is a specialized undertaking requiring expensive equipment and technical experience.

The trend to phenolic plastics for various packaging items lately has been very pronounced. The public has always liked bottle caps and collapsible tube closures made of these materials, and therefore packers have found them advantageous at the point of sale, as well as extremely practical in the packing procedure. Molded cream jars, boxes, display stands, compacts, lip sticks, trays for manicure ensembles, etc., all have very definite advantages. Their wide adoption is also due to the beauty of the material itself, the permanent lustre of its surface, the elimination of finishing or polishing operations, the accurate threads and details obtainable, the wide range of colors and non-brittle qualities.

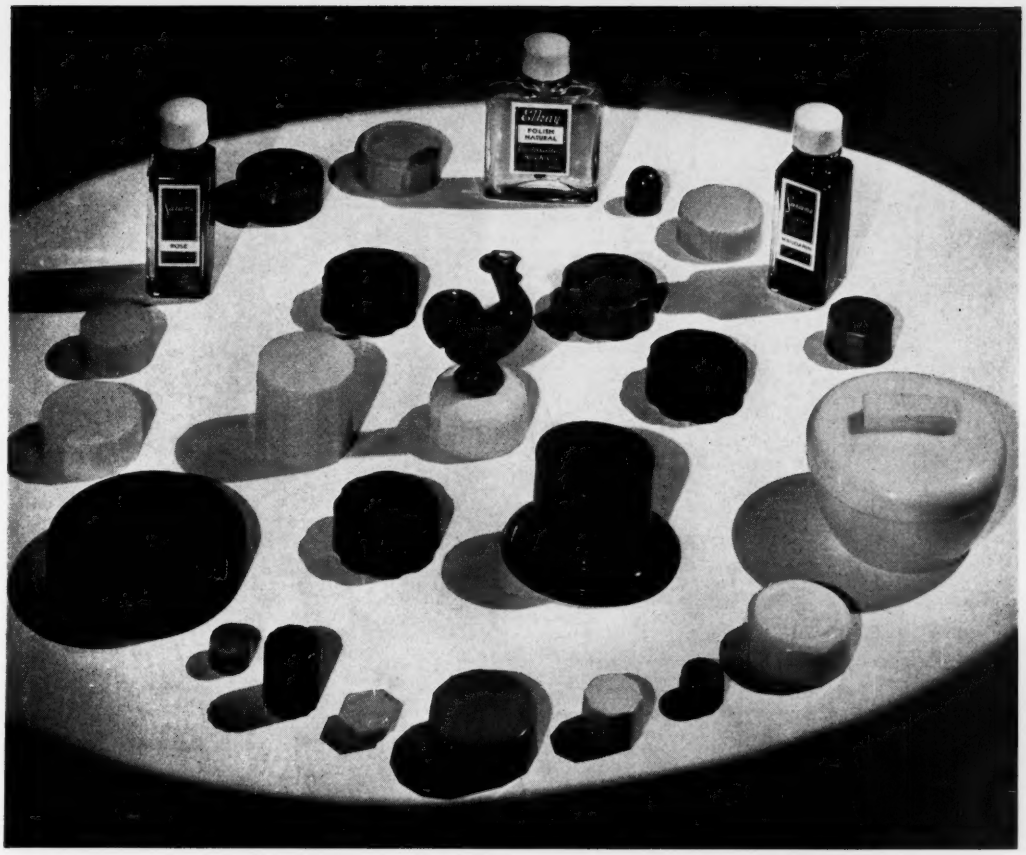
One of the outstanding advantages in connection with molded closures for collapsible tubes is that the closure does not leak nor do the contents cake or discolor in the mouth of the tube, thus throwing the often fatal strain on the tube's weak spot, the wall at the shoulder. Molded tube caps are often used without cork liners.

While manufacturers are alive to the appeal of color and the vogue of colors now reaching into every phase of merchandising, it is not color alone that prompts the use of the phenolic plastics.

Phenolic plastics are not affected by acids, alkalies and similar reactives. They do not rust or corrode in contact with certain pharmaceutical products nor do they discolor the contents of the container. Therefore these closures are suitable for whiskey and gin bottles, and a special grade of material that is odorless is manufactured by one concern for this purpose. In the form of caps phenolic plastics are easily gripped and screw down unusually tight and yet are always readily released. Their threading is stronger than the alloy metals and does not strip. They are light in weight, and have an advantage in carriage convenience.

In group packaging phenolic plastics are particularly fitted for the permanent tray or box for refill purposes. They make excellent display stands, cream jars, vanity cases, powder containers and hundreds of different types of boxes. They make unusually attractive reuse containers, and manufacturers have adopted them for belts, garters, suspenders, etc., with an after-use for cigarette containers, ash trays, etc.

The material, because of its fine lustrous appear-



In this group are shown several types of molded plastic closures, made from different compounds

ance, color and design possibilities, resistance to atmospheric conditions and ability to effect a tight seal, has been used widely for the highest grade cosmetics. Manufacturers of foods, candy, shoe dressing, have also found these materials valuable in the packaging of their products.

The design possibilities of phenolic plastics are unlimited and boxes of almost any design or shape, no matter how intricate, can be made, often at no additional expense.

Phenolic compounds permit manufacturers to have their own individual closure, bottle cap or container made, for the material lends itself to all types of design, imprinting and similar treatments, as any trade mark or design engraved in the hardened steel molds reproduces faithfully on the molded piece.

The material has also been widely used for distinctive talcum box caps, sprinkler bottle tops, inside thread caps, and for applicator caps, etc.

Non-hydroscopic cream jars or light weight and design possibilities beyond those usually found in materials for this purpose have recently been offered by manufacturers of phenolic plastics. They cannot crack, swell or bind. These newer materials are offered in lighter and more delicate colors including pastels heretofore unobtainable

Phenolic resinoids also include a group of transparent materials of limited adaptability and are supplied as solid blocks and rods which are machined or turned as in the manufacture of pen holders, pipe stems, etc. The materials of this phenolic group are manufactured by:

Bakelite Corporation under the trade name of Bakelite; General Plastics, Inc., under the trade name of Durez; Resinox Corporation under the trade name Resinox.

UREA PLASTICS

UREA plastics are furnished in granular and powdered form to custom molders. Molds are constructed of hardened and ground steel, the gloss of the finished piece being determined by the "degree of finish" of the mold. Pressure of 2000 to 10,000 lbs. per sq. in. of projected area and heat of 280 to 320 deg. F as developed in the steam jacketed mold causes the powder to flow. The cure or the length of time the piece is in the mold depends upon its size and conformation. Properly constructed molds and the right curing cycle will result in obtaining perfect moldings.

The trend in the last eighteen months to the

XUM

Molded plastic containers are produced in various shapes, sizes and styles and offer protection, durability and reuse. As may be seen from the few examples shown, raised decoration, metal appliques, partitions and other effects may be attained. The range of color obtainable in the three general groups of molded plastics offers an advantageous selection

use of urea moldings in the packaging field has been most pronounced. More eye appeal and increased salability were necessary, and these were accomplished through better design and the generous use of color. Starting from a translucent neutral white base, pigmentation is easy and beautiful colors and shades are possible. The colors are highly translucent and there is a depth and liveness about them that has a distinct appeal.

An extensive use of molded plastics is in the display field where they are used individually or in combination with metal and other substances

Urea moldings are insoluble and inert, resistant to greases, oils and solvents. They have no taste or odor and there is little or no tendency to show a dirty or greasy surface with constant handling. There is a "nice" feeling to the surface, no corrosion.

There is a wide range of standard colors and shades from which 90 per cent of all moldings are made. The colors are sufficiently light fast for all practical purposes, and where it is necessary can be obtained completely sun-fast.

The ureas have been widely used for tube and bottle caps. They give a distinctive attraction and the small spot of color sets off the tube or bottles. Rouge boxes, lip stick holders, cream jars and the other thousand and one items in the cosmetic field have advantageously been designed in this material.

The re-use container field is another large one and the pioneers who have used urea moldings here have been well repaid. Fruit cake, candy, glazed fruit, stockings, razors, are indicative of the wide diversification here. Displays made from this material are too good looking to be kept on back shelves. One dye house increased its sales 1500 per cent by a translucent ivory display stand.

Manufacturers of urea materials are Synthetic Plastics, Inc. (Beetle), Toledo Synthetic Products, Inc. (Plaskon), Unyte Corporation (Unyte).

CELLULOSE ACETATE

CELLULOSE ACETATE colloided with suitable plasticizers, pigments and solvents to insure a homogeneous, tough, plastic mass forms a molding material of great adaptability for colorful packages or containers. This unique molding material requires no special treatments such as a hardening bath, curing or subjection to high temperatures to complete condensation or polymerization reactions. Heat and pressure are required merely to mold the material into the desired shape.

Cellulose acetate molding material offers an unlimited color range to the designers of containers. These can be molded of transparent, translucent or opaque materials. Beautiful mottle effects are also available. The imitation of marble, onyx, jade and other valuable materials is so close that only an expert can detect the difference.

Containers or packages molded of cellulose acetate molding compounds are practically non-inflammable, are tough, resilient and resist breakage, are light in weight, uniform, tasteless, odorless, sanitary, non-corrosive, non-injurious and do not deteriorate or fade with age.

The most prominent manufacturers of the cellulose acetate group are Eastman Kodak Co., Celluloid Corporation and Du Pont Viscoloid Company.

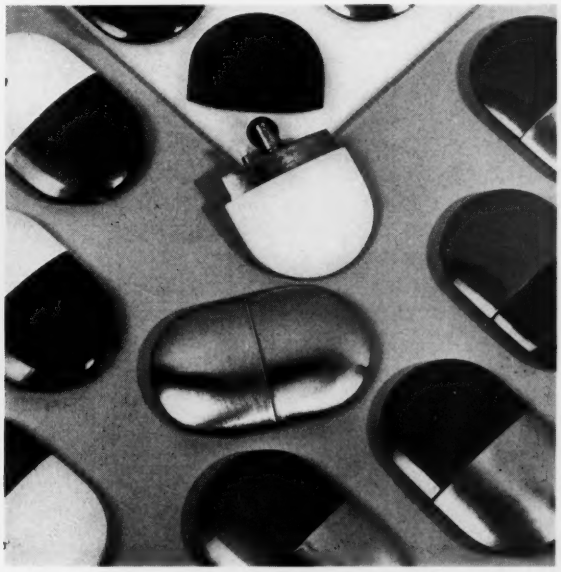
DIE CASTINGS FOR PACKAGES

THE versatility of zinc alloy die castings has made this method and metal a definite part of the merchandising plans behind many of our present packaged products. Although this method of manufacture is comparatively new to the packaging industry, it presents possibilities which the modern package designer cannot afford to overlook. It presents to the industry a basic idea—a new material which will give to the metal package or display a feeling as well as the appearance of quality, solidity and strength.

Die casting is an ideal method of producing complicated, attractive designs in metal packages or displays which could not be economically attained through other forms of manufacture. The method is such that unusual and intricate designs may be easily and economically reproduced in large quantities. The reader is probably familiar with "sand" casting—a wooden pattern is placed temporarily in the sand, making a mold that receives the molten iron or brass as it is poured from a ladle. Die casting, on the other hand, is a process of forcing metal under pressure into steel molds or dies. The process is a rapid one and provides further economies in that the castings as they come from the die require very little machining other than cleaning, and the as-cast surface requires little preparation for plated or lacquered and enameled finishes with various crackle, crystallized and masked and sprayed effects.

The use of zinc alloy die castings for re-use containers is a merchandising idea of proved worth, and the accompanying illustrations indicate further strides in the applications of this basic idea which is creating an indelible impression in packaging.

Watch display of die cast zinc



Lighter container of die cast zinc

PRINTING TRANSPARENT CELLULOSE SHEETS AND ROLLS

by B. W. Martin

AT an early stage in the development of transparent sheeting, it became evident that its field of usefulness would be greatly enlarged if it could be printed. Without printing, many manufacturers, especially in the food industries, experienced difficulty in finding adequate means of identifying their products when transparent wrappers were used. However, the non-porous surface of the material, as well as its temperamental nature, presented many problems to the converter, and much patient research was necessary in the endeavor to find their solution.

Intensive effort was applied, and progress in this direction was achieved as the result of several interesting inventions. Transparent wrappers in sheet form, printed in from one to five colors including gold and silver, have been available for some time past, and have found extensive application in many fields. In the candy industry they are being used for wrapping bars and boxes, as well as assemblies of individual pieces in cardboard boats. Meat packers have employed printed transparent sheets on a long list of products, including sliced bacon, pork sausage, smoked pork butts, regular and picnic hams, meat loaves, sliced dried beef, dry sausage, bacon squares, scrapple, chili con carne and various sausage specialties. Shirt and underwear manufacturers have found that attractive printed designs added identity and beauty to visibility and product protection, while the same attributes have brought many brands of noodles and macaroni to market in convenient, transparent packages. Butter, hosiery, small items in the textile line, rubber goods, pies, cakes and cookies are other hand-wrapped products on which printing has made the use of transparent sheeting practical and efficient for wrapping purposes.

A particularly interesting development in the art of printing on transparent sheeting has been the comparatively recent perfection of gravure printing, providing a means of securing great opacity in the printed area. This branch of the art has been especially valuable to manufacturers of sticky or moist foods, where the action of the juices in the product impaired the appearance of printing applied by the letterpress method. Because the gravure process made possible effects that could not be obtained by ordinary printing methods, a number of new applications of transparent sheeting came about through its introduction. Dried fruits, particularly, benefited; these are being packaged in printed transparent sheeting which is being used in a constantly growing volume.

Another valuable contribution to visible packaging came with the development of a method of applying a tinting to the transparent sheeting. Tinting is now available in a wide range of colors. This tinting can be applied either to the entire area of the sheet, or to a limited, definitely located area, as desired. Manufacturers of chocolate, or chocolate-coated candies, as well as those whose product requires the use of a colored wrapper, have found this development a genuine boon.

Further impetus was given the use of transparent sheeting by the subsequent perfection of methods whereby the printed stock is not sheeted, but is delivered in rolls to the user, and run through specially adapted packaging machines. Products packaged on automatic machinery, requiring the use of continuous roll wrappers, may now employ transparent sheeting printed in from one to six colors. Variety, or special breads, cigars, patent medicines in cartons, toilet soap and certain types of candy bars are examples of such products. Perfect design registration on the package has been secured through the use of photo-electric cells.

Opaque printing, as done by the gravure process, on continuous web rolls, is finding favor in the cigar industry. Reproductions of cigar bands as well as "continuous" or "all-over" designs are being used to a considerable extent. Certain forms of chewing gum, packaged in transparent sheeting on automatic machinery, are also employing printed roll stock for wrapping.

The advantages of transparent sheeting printed by perfected multi-color methods created a further demand for its application to a variety of package forms, to accommodate products where sheets, rolls or the usual types of bags would not answer. As a result, a number of interesting package ideas are now available in which printed sheets or rolls of transparent material are combined with cardboard backs. Some of these come in the form of bags, easily filled, closed and opened, yet possessing the rigidity necessary for the packaging of loose or fragile products or textile items which do not lend themselves to packaging in transparent sheet only. Lingerie, candy bars, nut meats, candy which comes in small pieces, noodles and macaroni, glacé fruits, powder puffs and hosiery are products successfully employing this type of package.

The use of transparent sheeting in the form of bands or wrappers, printed with appropriate designs, has permitted the transformation of standard packages of many products into special holiday numbers. Such transformations are accomplished at a minimum of expense, and with the further advantage that the merchandise can be reconverted into standard packages after the holiday season by simply removing the special bands or wrappers.

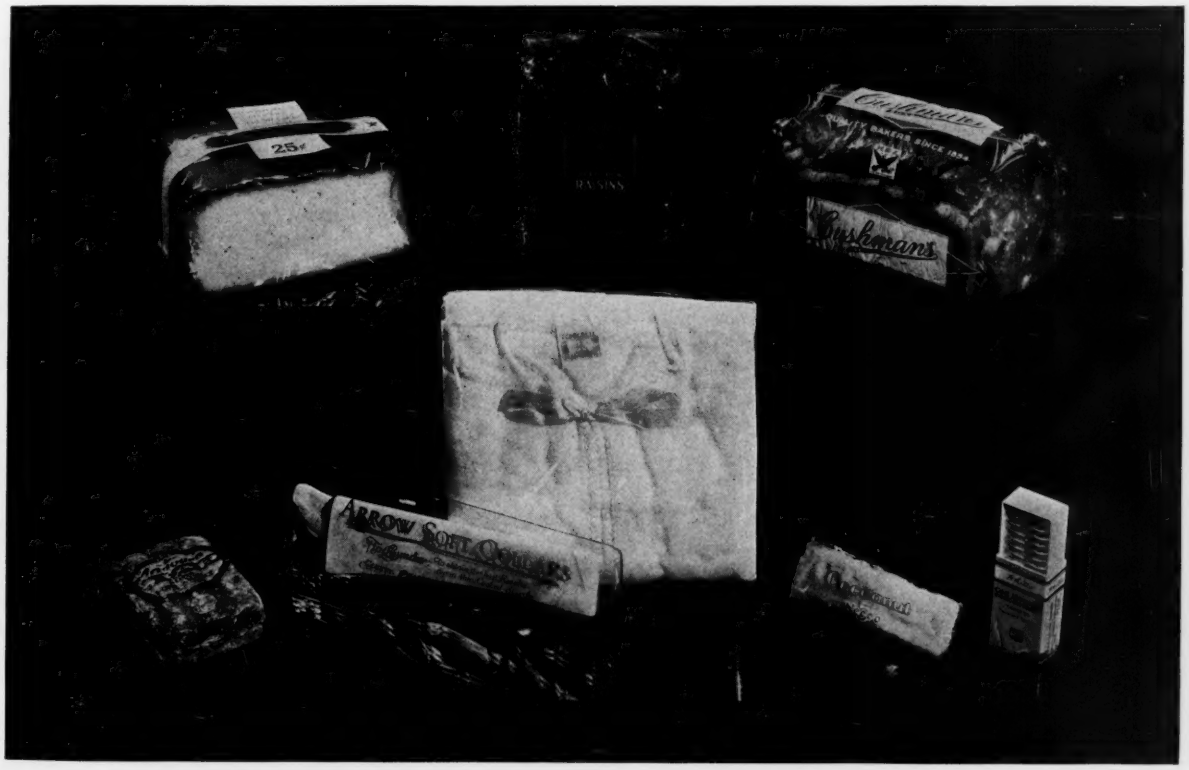
Colorful and striking designs are available for such holidays as Christmas, Easter, Mother's Day, Valentine Day, Father's Day, Fourth of July, Hallowe'en and Thanksgiving. Notable achievements have also been made in the production of Christmas and other holiday wrappings for gifts, printed in many colors on colored transparent sheeting. Matching designs are available ribbons of the same material.

Of especial interest to manufacturers contemplating the redesigning of package lines is the great improvement in design technique as used in connection with the decoration of transparent sheeting. Designs initially created were simple, usually employed few colors and avoided halftone and Benday effects. Present production facilities permit the artist a wide choice of effects, and an almost unlimited range of color schemes. Outstanding examples of the possibilities in this direction are the redesigning of several complete lines of packaged candies, to carry a "family" motif through the entire line. With a choice of letterpress or gravure printing in as many as six colors, with tinted or clear stock, and sheets, rolls, bags or specialized package forms to select from, artists and package designers are finding in printed, transparent sheeting a modern, highly adaptable packaging material that provides new scope for their genius. In addition to the elements of novelty and beauty, printing provides the means of perfect product identification, supplementing and often enhancing the inherent qualities of the transparent sheeting itself and without minimizing its transparency and protective qualities.

APPLICATION OF TRANSPARENT CELLULOSE

THERE are three general divisions into which wrapping with transparent cellulose or similar materials may be classified. These are divided as follows: Direct, direct with accessories and indirect, the applications of which may be seen in the accompanying illustrations. In each case the wrapping material may be plain or moistureproof, printed or unprinted or colored transparent cellulose may be used, depending on the desires of the package user.

In some cases there is a tendency to assume that a particular product can use only one of the general types of wraps. This is not always the case, as, for example, in the baking industry cakes are wrapped directly in transparent cellulose, also with the use of accessories and then overwrapped.



Packages which show direct use of wrapper on product or as an envelope or bag. Provides complete visibility and protection. Can be applied manually or by machine, printed or unprinted

Packages which show direct use of wrapper with accessories. Paperboard stiffener, boats, cut-out cartons or cards provide rigidity and shape to package, at the same time protecting product

Packages which show indirect use of wrapper, where protection of the package itself is desirable or of advantage. Wrapper permits full visibility of design and provides a de luxe package

GLASS PACKAGE LABELS

by F. L. Robinson

LABELS for products packed in glass have changed so radically during the past year that the modern manufacturer will do well to look over his entire line and see that his labels are giving him the maximum selling power.

"Selling power" is just the right definition for the new labels—they have to sell and they have to make spot decisions.

In the past, it was commonly thought that anything that was packed in glass could sell itself. Glass-packed products were new to the public, and people liked the idea of being able to see what they bought. The novelty of the idea increased the sales of many manufacturers' products. However, as time went on and more and more products appeared in glass containers, there appeared a need for distinctive labels to help merchandise move from the dealer's shelves. So many new products appeared in glass that not all could find a place on counters and in windows. Furthermore, with the many new developments in glass containers, there arose a definite need for a specialized type of label. Each trade has its own peculiar characteristics for its labels, but essentially they are all the same.

There are three kinds of labels that are being used extensively. The lithographed label, the flat printed type, and the flat or embossed metal foil labels are found on thousands of products today. During the past year, the effective label has been that one which could influence a prospect to buy in spite of the fact that several items may have been competing for the sale.

The effective label has the following characteristics which distinguish it from those of past years:

1. It is distinguished by its simplicity. No matter what type of printing is used, the essential characteristics must stand out and be read at a glance. It may be the name of the product, it may be a slogan, or it may be a trade mark. Whichever is most important to the sale of the product, that will be outstanding on the label.

2. There are fewer colors. Today, two or three colors, well planned and in a good design, are far more effective than the old label that had five or six, all mixed up in a design—no one of which was particularly outstanding.

Glass package labels including metal foil and paper, embossed and printed designs. Courtesy of Cameo Die Cutting & Engraving Co.

The modern embossed label or seal today is printed in one color on gold or silver foils. By far the majority of metal foil labels are printed one color, preferably black, red or blue. Another paper that is increasing in attention value is glazed surfaced and white or cream colored.

3. Superfluous printing on modern labels is out. Only the most important information is printed on the label occupying the front of a glass container. This might include the name of the product, the trade mark, the manufacturer's name and perhaps a simple slogan. The tendency is for less printing and more showing of the stock. Many of the modern stock surfaces are so unusual that they have excellent display value themselves. Should it be necessary that more information accompany the product, a second label is used on the reverse. When one large label is used the spaces on the sides are left vacant so they will not conflict with the selling message on the face.

The reason for this simplification is apparent. Few words are easier to read than many. Labels have to be billboards. Products compete for attention. Memory value is important.

4. A noteworthy step in label planning has been the increased emphasis on trade names. The manufacturers' names and other important factors that in the past have been prominent have been subordinated. People today are brand conscious; they ask for things as they see and hear them advertised. A prominent trade name is usually much shorter, more easily displayed and makes a deeper impression on the consumer.

Today, labels are designed for specific container designs. There is more grace, more beauty, more scientific reason for the label on the glass container than ever before. People buy because of container utility and beauty in many lines. The label that can emphasize these qualities has to be made for that particular container.

Thousands of firms will change the appearance of their containers during the coming year. It has been proved in many cases that new containers have increased sales. Manufacturers are realizing that they have ignored this fact in the past. They have spent thousands for advertising and sales promotion and have relied upon these media to sell their products at the point of sale.

Today, the public buy differently. When they are at the point of purchase, they may have in mind purchasing the article they have seen advertised. But the product that is well dressed, that which the public can see and handle and which has a quality air, stands a very good chance of being purchased. Distinctive glass containers and labels are responsible for many sales today.

Fortunately, many of the largest firms have recognized this fact and are making their products sell themselves at the point of sale. Their labels and containers are so distinctive that other brands not so well dressed lose their drawing power.

For 1935, the wide-awake manufacturer will review his glass containers and labels at the same time. The two go hand in hand together, and both play an equally important part in merchandising programs. A fraction of a cent in a container's appearance may mean thousands of dollars in increased sales of the product.

TYPES AND APPLICATIONS OF CLOSURES

by A. J. Sterling

FROM the earliest days of mankind the problem of sealing all classes of containers has been a vexatious question. The primitive urns, crocks and other vessels were sealed with covers of pottery, wood, skin and other crude methods, often topped with waxes of various kinds.

The first great advancement came with the discovery of cork, and this rapidly became universal in use. It served its prime purpose well and kept the contents of the container from leaking. Of course, glass became the first container with which the manufacturer had to contend and later on tin cans brought him further problems.

Glass, with its sanitary qualities, transparency and pleasing effects, took its natural leadership in a great many lines, but probably even today only about 30 per cent of those products which could be glass-packed are shipped in glass. This is due to the fact that up to the present time the glass container, plus the seal, plus the label, has not been considered as integral a whole as the tin can.

An ordinary cork, when pushed all the way into the neck of a glass container, needs a corkscrew to get it out, and this often destroys its effectiveness as a re-seal. Although corks form a very tight seal, they are hardly ever absolutely airtight. Space forbids going into details about corks or all the other seals that have since been designed most of which are now in use. Suffice it to say that it behooves us all to carefully study, test and compare the seals and methods before adopting any, remembering that the molding material, cork, metal, lacquer, liners, glassware and product to be sealed must be considered.

The following illustrations show types of closures which are the most prominent:

SINGLE SEAL CLOSURES

ALUMINUM VACUUM CAP WITH EAR FOR TEAR-OFF PURPOSES. A SIMILAR TYPE PROVIDES TWO EARS. MADE ALSO OF TIN

U.S. INSPECTED AND PASSED BY DEPARTMENT OF AGRICULTURE EST. 80 C
The Wilson label protects your table
WILSON & CO.
CHICAGO, U.S.A.

VACUUM CAP USED IN THE FOOD INDUSTRY FOR WIDE-MOUTHED WARE

BAND CAP USED IN THE FOOD INDUSTRY AND APPLIED BY CRIMPING

CROWN CAPS, WIDE AND NARROW. USED IN SODA WATER, FOOD AND BREWING INDUSTRIES

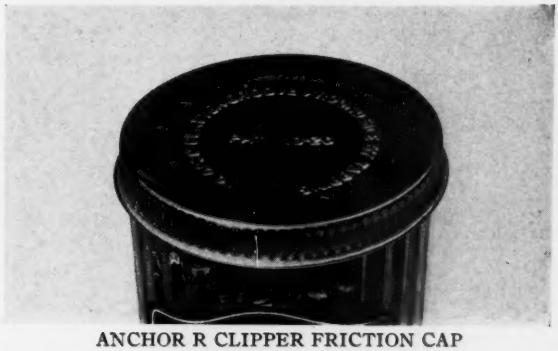
GOLDY SEAL, WIDE AND NARROW, WITH TEAR-OFF FEATURE. ALUMINUM .

TWO-PIECE CAP FOR FOODS (WIDE MOUTH)

WHITE VACUUM CAP FOR WIDE AND NARROW MOUTH WARE

RE-SEAL CLOSURES

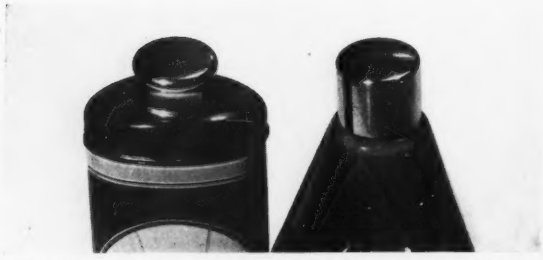
ANCHOR A CLIPPER FRICTION CAP



ANCHOR R CLIPPER FRICTION CAP

AMERSEAL, ONE-PIECE AND TWO-PIECE, NARROW AND WIDE. QUARTER-TURN CAP SEALED BY MEANS OF INTERRUPTED THREAD

CROWN LUGGED CAP



BRASS CAPS WITH LUGS OR THREAD, FRICTION OR QUARTER TURN

CORKS, RUBBER AND NATURAL. ALSO MADE IN COMBINATIONS OF GLASS AND CORK, GROUND GLASS, PAPER DISCS, ETC.

C. T. CAPS OF PHENOL RESIN, TIN AND ALUMINUM. ALSO IN GLASS, BRASS OR ZINC. THESE ARE REGULAR SCREW CAPS

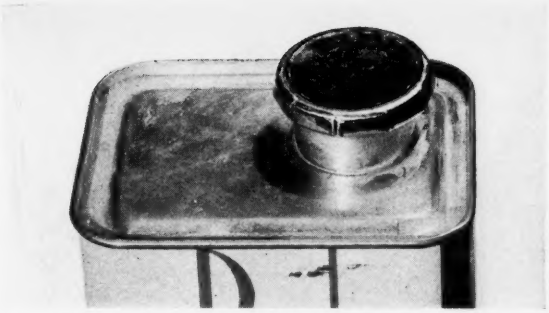
ADAPTATION OF CROWN CAP WITH RE-SEAL FEATURE BY MEANS OF WIRE LEVER

DUPLEX CAP. A QUARTER-TURN CAP, SEALED UNDER DOWNWARD PRESSURE

FRICTION CAP ESPECIALLY DESIGNED FOR CATSUP AND CHILI SAUCE BOTTLES

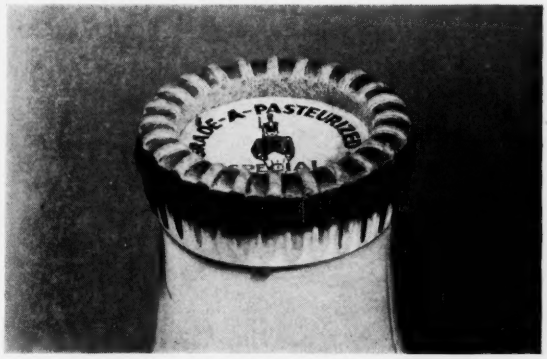
ROLL ON. AN ALUMINUM SCREW CAP, THE THREADS OF WHICH ARE FORMED ON THE CONTAINER

STERLING CAP. FOR NARROW OR WIDE MOUTH WARE. SEALED UNDER PRESSURE OR VACUUM



U PRESS-IT, SEALED BY MEANS OF INSIDE PRESSURE AND OPENED BY DOWNWARD PRESSURE

CORK-N-SEAL, WIDE AND NARROW MOUTH, SEALED BY DOWNWARD PRESSURE



SEAL-KAP SANITARY RE-SEAL COVER FOR BOTTLES AND JARS

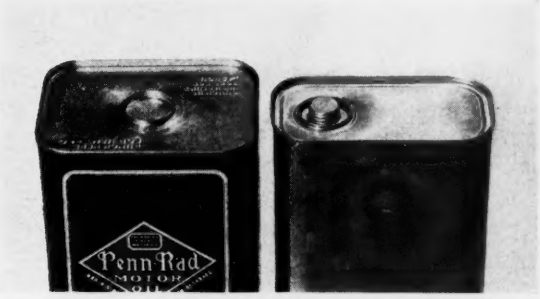
SINGLE AND RE-SEAL CLOSURES

(Used on tin containers only)

BARROL SPOUT AND CAP; A SCREW CLOSURE WITH NON-DRIP SPOUT EFFECT

FRICTION TOP, WITH OR WITHOUT INNER SEAL

LOCK-TITE SLIP COVER WHICH INSURES ABSOLUTELY TIGHT SEAL



NEWMAN CLOSURE. THESE ARE GENERALLY USED ON VARNISHES, OLIVE OIL, ETC., AND ARE SPUN ON

ONE-DRAW SLIP COVER

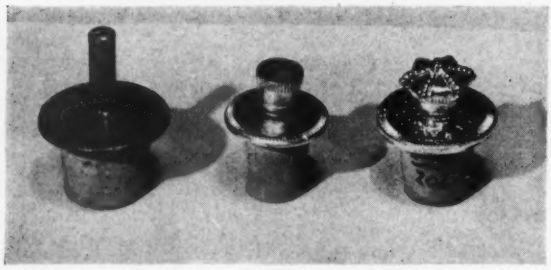
ONE-PIECE SINGLE SEAL, REAMED ON OR CLAMPED ON

MISCELLANEOUS

METAL DOUBLE SHELL SCREW CAPS. OUTER SHELL WITH STRAIGHT SIDE, INNER SHELL OF REGULAR SCREW CAPS

MOLDED C. T. CAPS MADE OF VARIOUS PLASTIC MATERIALS

GEL CAP, APPLIED AS SECONDARY CLOSURE



SPRINKLER TOPS, MADE WITH OR WITHOUT SPUN ON FEATURES AND ALLOWING USE BY MEANS OF SHAKING

HOODS OF FOIL AND METAL, USED AS SECONDARY SEALS

VISCOSE AND CEL-O-SEAL CAPS OF GELATIN AND CELLULOSE, USUALLY PLACED OVER OTHER CLOSURES FOR EXTRA AIRTIGHT PROTECTION

SPECIAL CLOSURES

INTERRUPTED THREAD CAP WITH CUT-IN LUG

ALUMINUM REAMED-ON CAPS, PLAIN AND SIFTER TYPE

GLASS FINISHES FOR CLOSURES

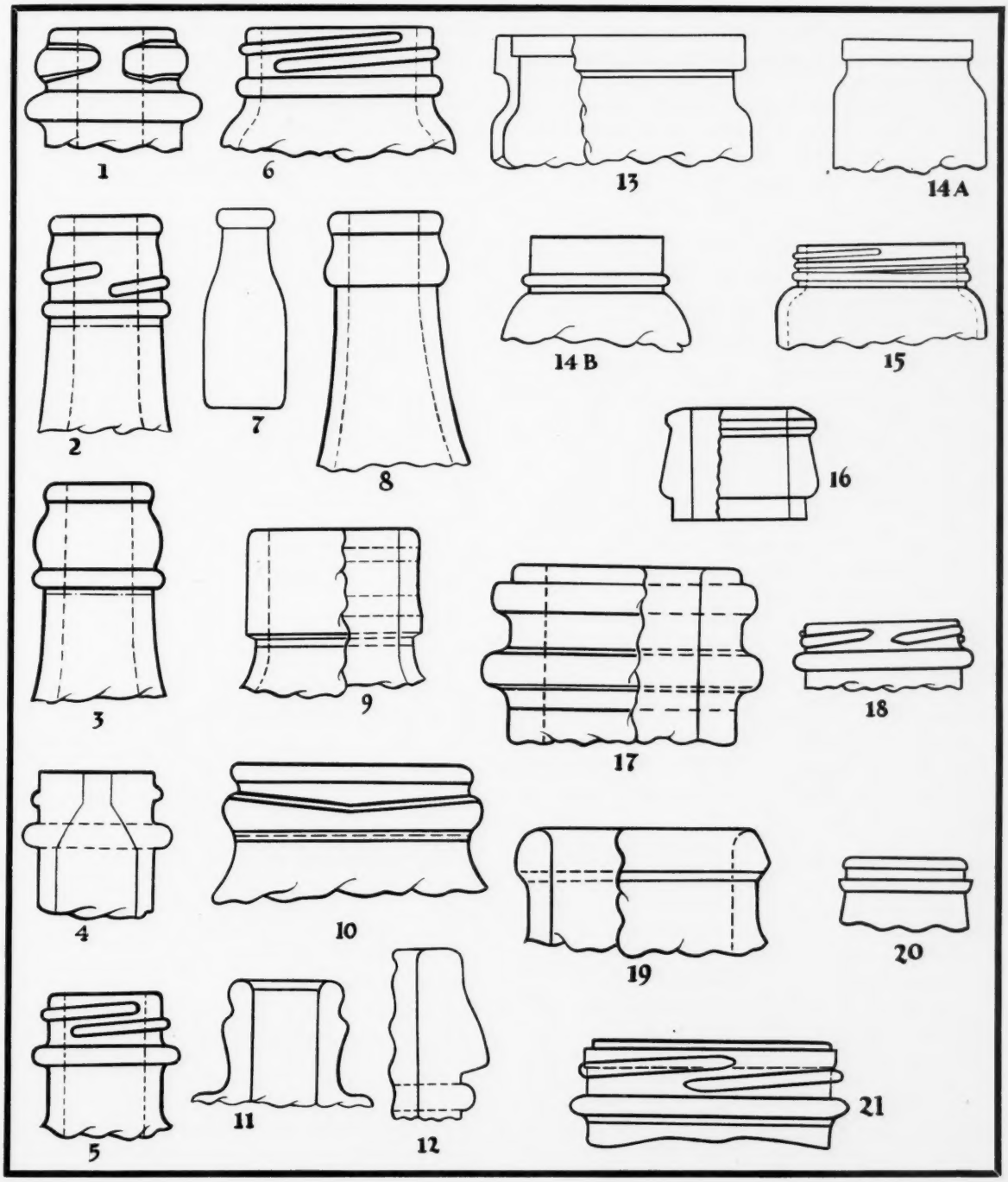


Fig. 1. Two lug Amerseal
Fig. 2. Combination Goldy, Crown, Handicap and screw cap
Fig. 3. Combination Goldy, Crown, Handicap and friction cap
Fig. 4. All glass sprinkler top
Fig. 5. Shallow continuous thread
Fig. 6. Deep continuous screw thread
Fig. 7. Milk bottle
Fig. 8. Crown beverage
Fig. 9. Save-a-seal (Patented)
Fig. 10. Variable ledge "Priof"
Fig. 11. Kork-N-Seal
Fig. 12. Four lobe duplex seal
Fig. 13. Phoenix band cap
Fig. 14-A and 14-B. Anchor or friction
Fig. 15. "R. O."
Fig. 16. Goldy
Fig. 17. Super-crown
Fig. 18. Four lug reseal
Fig. 19. U press-it
Fig. 20. Straight ledge pry-off
Fig. 21. Everseal.

Diagrams furnished through the courtesy of the Glass Container Association of America.

MATERIALS IN LINERS FOR CAPS

TO a considerable extent, closure efficiency depends upon the liner. It is the liner that comes in contact with the product and makes the actual seal with the glass. A liner usually is composed of two parts: the liner surface that touches the product, and the liner backing that provides resiliency and resistance. The selection of each should receive consideration as to the function to be performed by each.

The surface material must be carefully specified to withstand any possible chemical action or deterioration from the properties inherent in the product. It must be selected according to product characteristics in order to function properly.

The function of the liner backing is practically the same with all products. It, too, must be carefully specified with due regard to a number of factors. Among these are flexibility, softness, uniformity, economy and the ease of working.

From the standpoint of assisting the spring seal action of the cap itself, in making an airtight, leakproof seal the liner backing must have the correct amount of firmness or compressibility, as well as the greatest possible resiliency. The material should not be too easily compressed or too soft, because a certain degree of firmness is essential in order that the seal does not loosen nor the edge of the glass compact it too far.

The highest degree of resiliency is desirable so that there will be a constant tendency of the backing material to resume its former thickness (before being compressed), thus insuring that, after the cap is applied, the seal will remain tight and secure during its period of service.

When the use of liners was confined to crown caps, for which they were originally devised, the problem was not a trying one. It was answered satisfactorily by disks of natural cork or of cork compositions that would hold the comparatively simple and chemically inert carbonated or low alcoholic beverages which were sealed with crowns. However, with the development of screw caps and other types of mechanical closures, the liner problem became more complex and required close attention.

Many materials have been developed for the purpose, but still there remains the question of determining which particular one to use for a specific product. Logically enough, the cap manufacturer has shouldered the job of answering this question for those who contemplate using his caps. The packer can and should by all means submit sample packages of his product and a chemical analysis of it to the cap manufacturer for laboratory tests to find out the kind of liner it requires.

Cork compositions produced by granulating high-quality corkwood, introducing a binder, and compressing into blocks from which sheets or ribbons are cut, are widely used as lining materials. Disks of natural cork are also used to some extent but due to the limited supply of corkwood that is largely free from pores and other defects, its use is restricted. Compositions serve equally well except in that the introduction of a binder and the presence of interstices in the surface make them susceptible to chemical reaction in some cases.

In addition, it has been found advantageous in some cases to treat the cork composition with paraffine or other waxy materials. Such treatment often makes a plain cork liner satisfactory. However, these treatments should always be used with caution for it must be remembered that there are many liquids with which they should not be used.

A great variety of liners is produced by applying a facing material over the cork composition. This operation is ordinarily referred to as "duplexing." The cork gives the liners the necessary thickness, strength and resilient compressibility, while the facing, which is presented to the contents of the package, resists chemical action. The facing materials used are varnished papers, paraffined papers, tin foil, aluminum foil and lead foil, in addition to foil backed with paper.

Varnished papers, which are probably the most widely used of all liner facing materials, have been appropriated and developed from the electrical insulation business. They have different chemical characteristics depending on the formula used in making the varnish. Two pieces may be identical in appearance and yet vary greatly in performance. Careful tests of varnished papers must be conducted before selecting a specific kind of quality for a product. Sometimes varnished papers are coated with paraffine in order to lubricate the surface and prevent tearing, due to roughness of the bottle, when the cap is screwed on. This safeguard cannot be used if the liners are to seal products which dissolve the paraffine. Paraffined plain white paper as a duplexing material sometimes proves satisfactory with creams and pastes.

Tin foil-faced cork composition has a large field of usefulness as a lining material due to the fact that it withstands contact with a wide range of chemicals. However, it also has definite limitations and is more expensive than varnished paper. To give tin foil added strength and a better appearance, a lining material has been developed in which very thin foil is backed with a reinforcement of paper. In some instances aluminum foil and lead foil are also being utilized.

Pulpboard is still another such material which may be had in the various facing combinations mentioned. Rubber is also used for liners. Its principal use is in sealing strong alkaline solutions which attack the more common lining materials.

THE PACKAGE INSERT IN ADVERTISING

by Robert R. Brown

PACKAGE ADVERTISING may be defined as that form of consumer selling or promotion which utilizes the retail package as the medium or vehicle for carrying the message. It may have for its purpose any one or all three of the following objectives: (1) Keeping customers sold on the product. This objective is most commonly attained by utilizing the package literature to give complete and detailed instruction for the use of the product. In addition, this objective is attained by using the package literature to constantly remind the customer of the unique sales points of the product or its individual institutional story. (2) The second use for package advertising is to build volume through variety of usage. More often than not, a product has other uses than the one for which it is commonly bought and it is in this particular that package advertising is especially adaptable for inducing a customer to try other uses. A new use is a new customer in any merchandising language. (3) The third main objective for the use of package advertising, is for *cross-advertising* purposes. This consists of calling the attention of a customer of one product to other products in the line by means of package advertising.

TYPES OF PACKAGE INSERTS

Rear row: Branded insert with transparent cellulose band; over-end insert, machine applied; collar label, hand applied; inner-carton insert, machine or hand wrapped; Outsert applied to bottle
Front row: Neck band insert, applied to bottle; under-label insert, and envelope insert

Under any one of the three headings mentioned above, package advertising may utilize recipes, sampling coupons, premium offers, testimonials, illustrated instructions, lists of uses, booklet offers,

prize contests, proof-of-purchase coupons, institutional stories, personality appeal, etc.

In general a package insert may be defined as a piece of advertising literature which is made to accompany a product by means of some form of insertion. The various classifications of inserts are as follows:

1. *Co-Product Inserts.* In this form of insert, the printed literature is inserted in with the actual product. It usually is placed on top of the merchandise as a last operation before closing the package. It can be inserted by hand or automatically by special insertion machinery. Due to acid reaction of inks, certain non-poisonous vegetable compounds should be used if the product requires. Government regulations are strict and specific in this regard. Usually single leaf inserts are used, due to the fact that with finer products such as flour, etc., a folded insert will bring out considerable of the product when the insert is removed. Specially oil treated papers are used with oily products such as canned sardines, shoe polish, etc.

2. *Inner-Carton Inserts.* These are inserts which are inserted inside of the protective carton along the side of the bottle or jar. They can be inserted by hand or special inserting machinery. They are removed after the bottle or jar has been taken out. Due to the fact that they usually cannot be seen unless the carton is examined after the bottle or jar has been removed, such inserts are often made inexpensively to allow for a high percentage of waste. A notable example of this is the Listerine insert.

3. *Over-End Inserts.* This form is inserted over the end of the cartoned jar, tube or bottle to make more certain of it not being overlooked when the carton is opened. This requires a longer form of insert, a narrow multiple fold and breaking the insert over the end of the container. They can be inserted either by hand or special inserting machinery at a high rate of speed. Removal from the carton and its being seen is insured by this method with the exception of the cases where the container opens at both ends and is removed through the bottom of the carton rather than the top. Practically all inserts in toothpaste cartons follow this method.

4. *Banded Inserts.* A banded insert is one which is confined to an un-cartoned container by means of bands consisting of various materials. The most used band is the rubber band. This is strictly a hand application operation. The rubber band is likely to roll off in handling and is subject to deterioration which besides losing the insert marks the age of the product. Other banding materials are kraft paper and transparent cellulose. This operation is usually done by hand, although special automatic machinery can be built. The most notable example of a banded insert is to be found on the Three-In-One Oil can. The transparent cellulose band is often used for label protection as well.

5. *Under-Label Inserts.* This form is carried by means of inserting the folder under the label. It can be done by hand or by means of specially built automatic machinery. In some cases the label portion holding the insert is left unglued in order to allow removal of the folder. There is danger, however, of the folder slipping out in handling. To overcome this the folder or the label is spot glued which requires that the label be torn in order to remove the insert. The most notable examples of these two forms of under-label inserts are to be found on the Certo bottle and Carbona.

6. *Envelope Inserts.* In this case a separate envelope is labeled to the back of the container by hand or labeling machinery and the folded insert is placed in the envelope by hand. The oldest example of this form of package advertising is that of the Feen-a-mint bottle. The main drawbacks of this form are the bulkiness of the combined envelope and insert and the inaccuracy of spot labeling at high production speed. Its commendable point is to be found in the envelope serving as a container for reinsertion after the insert is read.

For purposes of package advertising the surface of the container is often utilized to do the entire package advertising job. Particularly is this true of tin containers such as types used for fruits and vegetables and the types used for insecticides. These containers give a large printing area. For the other types of containers the package advertising job is usually limited to one of the four surfaces.

1. *Front Label.* Although the front area as a means of package advertising formerly was used extensively, the modern trend of simplified design has removed practically everything from the front label except the design elements. One of the most notable present examples of this former practice, is to be found in the label on some of the Squibb products. One way which has been resorted to as a means of meeting both the demand for simplicity in label design and the necessity for package advertising, has been to extend the front label around the two sides of the container. The front area is made to carry the design while the package advertising is placed on the two wings. The all-around label is merely an extension of the idea and is done for the same reasons.

2. *Back Label.* While the front label is usually devoted entirely to label design, the back label is utilized for package advertising purposes. It is usually limited to directions for the use of the product which necessarily must be brief. Occasionally other uses and other products are listed but seldom is there any space for selling.

3. *Cap Area.* The top or cap of a container is frequently used for package advertising purposes. Its most usable form is the lithograph metal cap. The most notable example of cap area advertising is to be found on the Best Foods Mayonnaise jar, where various recipes and cross-advertising are

placed. Another form used is that of a pasted top label.

4. *Bottom Area.* Particularly in cases of high class cosmetics where the appearance of the container is of extreme importance, the bottom surface of the jar or bottle is utilized for package advertising which usually takes the form of a pasted label but has the disadvantage of the likelihood of its not being seen, although some very good results have been obtained from utilizing this space. The most practical container for utilizing the bottom area is to be found in the sifter-top container, which necessitates the bottom being turned up to view when the product is used.

Under the third classification is to be found those forms of package advertising which consist of separate units added to the package for the specific purpose of doing some special package advertising job. The three most widely used forms are:

1. *Collar Label.* This is usually a single sheet with a die-cut hole. This form is hung over the neck of the bottle and is not subject to automatic application.

2. *Special Banded Label.* This form consists merely in a printed strip of paper or other material which is wrapped around the container and sealed by an overlap. This form is utilized most widely in the case of bread; also Outdoor Girl has used it extensively on their powder cans to do specific merchandising jobs.

3. *Extra Wrap.* This form consists of a secondary wrap around the container which serves primarily to carry package advertising. The best example is to be found in the extra wrap on the Crisco can where the inside surface of the wrap is devoted to recipes.

4. *Tag Form.* With this method a string is used through the eyelet of a card, folder or booklet to tie it to the merchandise. This is most commonly done with such utensils as kitchen ware which do not offer opportunity for other means of package advertising. It is a hand operation.

An Outsert is an interiorly sealed folder which is attached to the outside of a bottle, jar or carton by standard labeling methods and equipment. It remains confined in shipment and on the dealer's shelf; yet is readily opened by the consumer. No carton is necessary to carry the literature nor is a band needed to confine it to the container. They remain labeled to the container until such time as the customer has time and is disposed to read them. When opened and removed, a direction label remains permanently on the container. The Outsert views every package as having two sides: the sales side which includes the package design, label, cap and general appearance, and the re-sale which utilizes customers' circulation for package advertising purposes. The Outsert is a patented idea manufactured by Outserts, Inc., and combines all of the advantages of an insert with greater space.

DISPLAYING THE PACKAGE

THERE is no branch of advertising to which more attention has been paid during recent years than the improvement of the appearance of packaged merchandise. This improvement was started through the efforts of some few manufacturers to out-distance their competitors by making their packages more appealing than the competing lines, and, naturally, the example was soon followed by others. In the beginning of this change toward a more attractive package, the new and more artistic examples stood out in strong relief from their competitors, which served as a foil for their brighter colorings and more striking designs.

The trend toward color and improved design has been so generally followed, however, that today, however bright and pleasing a package may be, it no longer has as great a power of attraction as at first, for its colors are now merged in the general color display toward which most of its competitors contribute equally.

The multiplication of the number of manufactured and packaged products, the increased individual demand attributable to national advertising and the open display resulting from the chain system of selling have been responsible for a studied economy in shelf space and an orderly and compact arrangement of packaged products which has necessarily lessened the individual appeal of each item.

As a regiment of soldiers advances toward you, the eye accepts the mass as one unit, individual features being disregarded in its acceptance of the whole, but the moment that half a dozen men step forward from the ranks the attention is immediately centered upon them and their individual features are seen and noticed. So the advertiser seeks to bring his products forward from the ranks to focus public attention upon them through prominence of position, and to suggest, by a forward advance from the shelves, a further possible advance into the homes of his prospective customers. He knows that, whatever may be said to the contrary, buying is by no means all planned beforehand, that the roving eye of the customer will fix itself upon the most prominently displayed items in the store, and that increased sales of his product will naturally result from interest awakened in this manner.

Shown are various examples of efforts to overcome the growing limitation of store space, to meet the changing economic conditions and to gain the

Counter display basket which permits open display of goods within easy reach of shopper. May be used for single products or an assortment of a manufacturer's line. Courtesy of Forbes Lithograph Manufacturing Company

Type of "island" or floorstand display which can be placed at convenient points in the retail store and is easily available to customer convenience. Courtesy of Hinde & Dauch Paper Company

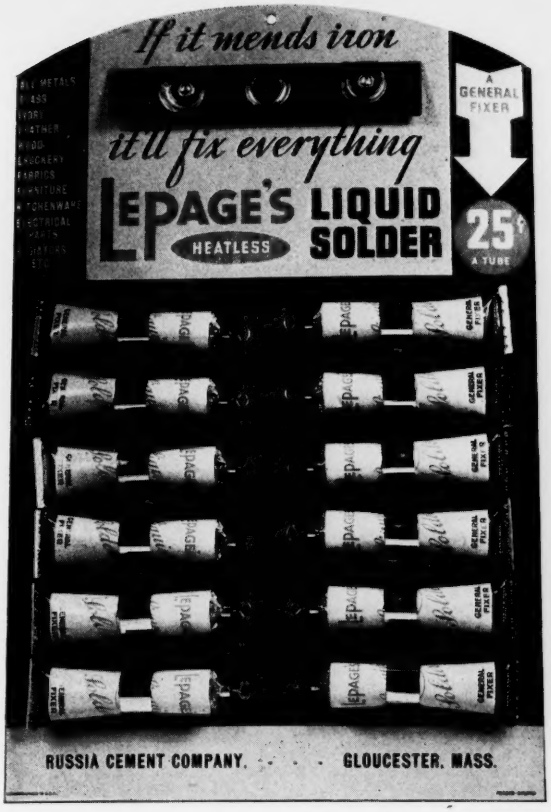
Display card and easel which permits the featuring of actual packages and sales message. Courtesy of Einson-Freeman Company, Inc.

cooperation of the retailer in increased efforts to effect sales.

In window display of the package the scope is somewhat greater, as in a well-designed display the whole of the window space may be made available to one advertiser. The opportunity for artistic results is almost unlimited, but here, again, it is necessary to plan for an elastic display which may be adapted with ease to any size or shape of window.

The better the job is done, the more likely will the dealer be to use it; the more people it attracts to his windows, the better he will like it. There has been a great deal written and said about "dealer cooperation;" perhaps it is easy to forget what the word actually signifies. The dealer will be ready enough to cooperate where the advantage is mutual, when he can see that a display will actually make sales for his store of the product displayed and bring people into the store for other purchases also.

A successful window display may be based either upon the principle of harmony or the opposite principle of discord. A balanced and formal window attracts by virtue of its order and balanced design. This balance may be carried out in color harmony or in the pattern of its arrangement, or both. Or, on the other hand, attraction may be gained through a sudden departure from the orderly and



Demonstrator display card which provides self-service and indicates uses for attached packages. Such displays as these sell packaged products "on sight." Courtesy of Forbes Lithograph Manufacturing Company

NORWICH COLD RELIEF
Nose Drops KILL COLD GERMS
Aspirin KILLS PAIN
Peptans FOR ACID STOMACH
Respamol STOPS COUGHS
How to avoid COLDS
FREE BOOKLET TAKE ONE
DON'T LET A COLD GET A HOLD
NIP THAT COLD IN THE BUD

Counter display with shelves, permitting the featuring of several related products which can be advantageously used for a single purpose. An example of a constructive selling display. Courtesy of Einson-Freeman Company, Inc.

ordinary, by a bizarre note of discord which strikes the eye, and which, when cleverly executed, will sometimes achieve results in attractiveness which would be impossible to more formal setting.

In both cases the first point of attraction must be the appeal to sense, or to the senses, in order that the advertiser's message may be instantly delivered, and interest for the product awakened.

The proper display of the package as an individual unit or as a group is a complementary link in the strategy of product selling. The display in such case furnishes an additional demand on the attention of the prospective customer, besides serving as an efficient silent salesman in that it provides a means of giving further information about the product.

The subject of displays is an extensive one and, as is the case with the individual package, each display must be regarded from the standpoint of its relationship to the product for which sales are being sought. The type selected, its location in the retail establishment, its ability to meet the competition with similar or dissimilar displays—these and other factors must be considered in plans that are made for effective package displays.

METAL DISPLAYS FOR PACKAGES

by D. H. Bitney

THE designing and manufacturing of lithographed sheet metal or wire display racks has been studied and developed to a high degree of perfection, and has kept pace with the constant improvements in the packaging of products. In the past two years there have been some attractive and economical display racks developed for almost every type and kind of package from a fly swatter to a hot water bottle. The racks provide displays for products that it would be impossible to display in any other way, and it would be out of the question to get the merchant to display the product unless an easy and attractive method was provided. Invariably these displays immediately increase the sales of the product, and please the dealer who keeps the display fixtures in use for many

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months. They often pay for themselves the first month they are used.

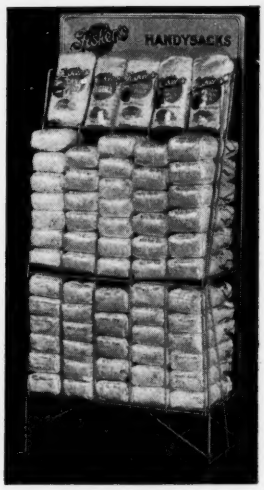
The statement is often made: "We will have to have a high-class display rack, for our merchandise is high-class and goes to a high-class trade." A nickel-plated or gold-plated rack will not sell high-class merchandise or any other kind of merchandise. Remember that you are not selling racks—you are selling merchandise off of the rack, and if your package is attractive it would sell best if suspended in mid-air, without any rack or anything to detract from it. The more you can get your merchandise out in front of your display fixture, the less you can see of your fixture; the better your product is displayed, the more you will sell.

Sheet metal display for hair rinse. Wire displays, courtesy of Union Steel Products Co.; Sheet metal displays by Shonk Works, American Can Company

The more inexpensive display racks or fixtures are generally sold to the dealer with a deal of some sort. Some racks are included with a gross of a certain package, or with a contract covering a certain quantity during the year. Naturally more merchandise is sold to the dealer than he has purchased previously, for you have provided a means for him to sell more of the merchandise and bring more profit to him.

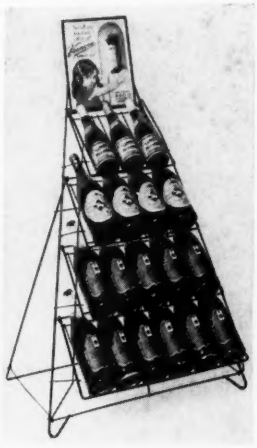
The heavier and more expensive racks are most always loaned to the merchant, and if he purchases a certain amount of merchandise during the year, the rack becomes his property. The method of handling the display rack with the merchant depends a great deal on the value of the merchandise displayed on the rack. The selling or loaning of the racks to a merchant always makes the merchant respect the rack more, and as long as he has any money tied up in them, or the rack belongs to someone else, he will see that it is kept in use and that he gets all the good out of it that he can.

Sheet metal display for transparent bags



Wire display for bags

There have been many novel schemes of display that have worked out satisfactorily. One manufacturer wanted to get a prominent display of his liquid cleaner. He knew that he could not get it displayed prominently without providing a rack, and even then he did not believe that the merchant would display his cleaner prominently without some further inducement. He finally provided a rack with his bottled cleaner attractively displayed in the bottom of the rack and the top of the rack was a good-sized basket in which the dealer could display anything he wished. This gave the dealer a floor display of any product he wishes to feature, and also gave the manufacturer of the cleaner a display directly under the product which the merchant was featuring. This particular type of rack would be worked out for a great many products, and would work to advantage for both the dealer and the manufacturer.



Bottle display rack

Transparent packages dress up a wide variety of products but cannot accomplish definite results unless the packages are placed where they can be seen. Recently a large rack has been developed which permits the dealer to realize the maximum benefit from transparent packaging by creating a transparent package department in his store. A single unit under a recent test increased the sale of products on display 100 per cent. The test was made in several stores without any other promotion being given the product while the test was being made.

Often an attractive mass display may be secured with very little floor space required. A successful display was developed to display five varieties of flour which was packed in handy two-pound cloth bags with transparent cellulose wrapping. The five bags were neatly displayed on the top shelf and directly below were stacked twelve bags of the

variety displayed above. The rack occupied only the necessary floor space that would be required if the five bags had been laid down on the floor side by side, yet the rack was rigid, collapsed for shipping, and was inexpensive.

Beverages have thirst appeal and, if properly displayed, sales increases are usually gratifying. A neat, safe mass display of bottles is difficult due to their shape and possible breakage. Many effective racks have been developed—pyramid displays, round and rectangular displays, all requiring a minimum of floor or counter space. One of the most popular is the pyramid floor display that holds the bottles in the most attractive angle, is collapsible for shipping and inexpensive.

Sheet metal rack for sheets and pillow cases

A display of a manufacturer's assortment always produces sales increases for each item in the assortment. Often a manufacturer is known for the quality of a single product, and, by associating all products, the public infers the same quality prevails throughout the line—which results in more sales on his less popular products. A round display of polish, cleaner and top dressing for autos for use in garages, and filling stations was effective. Empty cans were soldered to the rack. The top was removable and the base set over it for compact shipping. A similar rack was made for a large manufacturer of marmalade.

A new package for oil immediately necessitated a new method of display. Oil in tin cans is becoming quite popular and it lends itself to display very nicely. Several types of racks have been developed that hold the can at an attractive angle and permit placing on the average filling station island.

Sheet metal display for clinical products

Multiple shelf counter racks that hold out candy bars in an inviting manner have been successful displays. These racks may be adapted to display most any small packages effectively. They are made in many sizes and shapes and all collapse flat to be shipped.

Display rack for spice cans

Rotating counter racks with projecting arms required little space and are effective displays for nuts, candy, potato chips, noodles, cake, confetti, and similar products that are packed in transparent bags. Several bags may be placed on each arm, thus carrying a good stock, and the display is not broken until the last bag is taken from each arm.

A small stairstep counter display is always good, especially if it pyramids a little for balance. This type of display has been used to increase sales on cigars, paint, flavoring, insecticide, greeting cards, literature, etc.

Spices are hard to keep straight on shelving, and it is almost impossible to stack them one on top of the other, without getting anything short of a mixed-up pile of small containers. A rack has been developed that will hold these small spice cans at an attractive angle and always keep them straight and orderly. This rack can be used on the shelving or can be set out on the counter when a dealer wishes to make a special on spices. The rack can be designed to display any other kinds of packages of a small size.

Sheet metal display for medicinal bandages

Self-service automatic displays that display and dispense packages with little more counter space necessary than if one package were displayed. These racks are filled at the top; the packages slide down and the bottom package projects out in front inviting one to take it. The stock is rotated and the oldest package is sold first. A similar rack has been an effective silent salesman for aspirin, soap, gelatin, spices, cheese, cookies and coffee.

Compact counter displays of bottled goods produce extra sales. Round bottle display produces attractive display from every angle, inviting you to help yourself. The displays are collapsible and inexpensive and require but small space when they are shown on the counters of retail establishments.

STAPLING FOR SEALING AND DISPLAY

by F. L. Brown

STAPLING small items to display and identification cards is a rapidly growing method of increasing sales. It helps to eliminate pilfering—it gives the article an eye appeal—it carries good selling suggestions. For the manufacturer it gives a chance for identification and the opportunity of listing other items made by him.

Hand stapling store-packed grocery items

Recently the practice of stapling has developed a grouping of items to make a complete sale so that the sales clerk does not have to run about the store for screws or other combination items and always furnishes the right ones. This carding may be done in different places so that small economical units of production are needed. Furthermore, in some lines there are so many varieties of items requiring different sizes of staples that quick, inexpensive changes are usually necessary.

Stapling machines meet all of these requirements, and where bottles or other fragile items are to be carded it is easier to control the pressure and prevent damage. Stapling is speedy and secure—there is no need to wait for an adhesive to set and the staple will hold in any kind of weather or environment.

The fact that stapling machines are portable and can be driven by hand, foot-power or motor gives them a universal use. This is a valuable consideration where there is a tendency to utilize dull hours for pre-packaging in stores where the pre-packaged goods, if put in transparent containers, not only help sell but speed up service in rush hours. Bags of all kinds are now more securely and quickly sealed in this way and, on the average, more cheaply.

Fruits and vegetables are being packaged in the field in some sections. Crates are covered and cars and boats are lined with the same kind of hammer that puts cards on boxes, crates or barrels. Shipping containers, too, are bottomed and sometimes sealed, with stapling machines with speed and added security. Such containers can be re-used when staples are moved with special remover recently made for this work.

Even the largest concerns with automatic equipment find need for supplementary packaging work, especially in trying out new packages before making large investments in equipment. All of these developments, so briefly touched upon, grow out of the principles developed in the desk fastener that revolutionized the handling of office papers. Its amazing hold on business throughout the world has just been

Machine stapling of display cards

strengthened by a radically new type of machine with greatly increased capacity—durability and ease of operation that is free from operating troubles of any kind. It is also a marked addition to product design in which any one concerned with design improvement will be interested.

PACKAGE TYING MACHINES

SEVERAL new types of automatic and semi-automatic tying machines have recently been placed on the market. The new principle embodies a manual cross-tie operation while the package is still in the machine. The machine stops at the half-way mark, permitting the operator to turn the package 90 deg. to the cross-tie position. A greater range of sizes can be tied with the cross-tie using this principle than with the old method, and

Package tying machine at confectionery plant

greater speed can be obtained. There is an added tightness also, as but one knot is tied. These manual cross-tie machines come in double, triple and quadruple wrap and will handle all sizes of cotton twine, including cable cord. Three different ties can be made with any one of these machines—as, for example, the double wrap laundry machine. A cross-tie can be selected on a medium or small bundle; a double wrap one way on a large, heavy bundle, giving a strong tie; or a single string on a very light package. No time is lost in selecting the proper tie.

Another new development is the transparent cellulose bag tying machine. This machine makes a double or triple wrap of colored or rayon twine around the neck of a bag, and the typical long loop bow-knot sets off the appearance of the tied bag. This tie also hermetically seals the bag. Great speed is the feature of this machine.

There is now available a full line of tying machines to handle any and all packages or bundles, no matter what the size or weight.

CREPE WADDING

CREPE WADDING is extensively used as a packaging adjunct in the packing of tablets, capsules, ampoules and various pharmaceuticals, cosmetics, bottled goods, scientific instruments, fragile and highly polished specialties. Such wadding to meet the several requirements should be white, soft, of dependable consistency in thickness and grade and be highly absorbent. Crepe wadding absorbs sixteen times its own weight in moisture. It may be obtained in rolls, sheets and pads.

For liquids sampling or shipping liquids by mail, domestic and export business, to meet the requirements of the Postal Regulations and the necessities of protection in a high degree, as well as offering light weight and other advantages, absorbent crepe wadding is an ideal packing.

This material, provided in various thicknesses and paper backed, ready for use, is also utilized for box top padding. Among the economies which have been pointed out by companies who have used this

Crepe wrapping used in packing liquids for mail shipment

padding are the following: due to the paper backing and the flatness and uniformity of sheets, it can be readily jogged in a cutter, while most padding has to be laid out separately, each sheet at a time; the paper backing eliminates the need of placing a pad-

Crepe wadding used as protective pad

ding and a manila sheet on separately when they are applied at the wrapping machine.

Two developments in crepe wadding, of interest to the designer and buyer of packages and supplies, have occurred within the last two years. First a new form fancy corrugated wadding has come on the market. Secondly, colors in both the plain and corrugated types. Both developments increase the adaptability of these products from a decorative standpoint to modern requirements in packaging as well as in package display, and are bidding for increasing importance.

PAPER EXCELSIOR

LABORATORY TESTS have shown that paper excelsior absorbs up to 50 per cent more of the shock than wood excelsior. Actual packing tests showed time savings of 15 to 20 per cent. Despite these qualities the price of paper excelsior in the past curtailed its use. However, under present prices due to large scale manufacturing, some grades are more economical than wood excelsior.

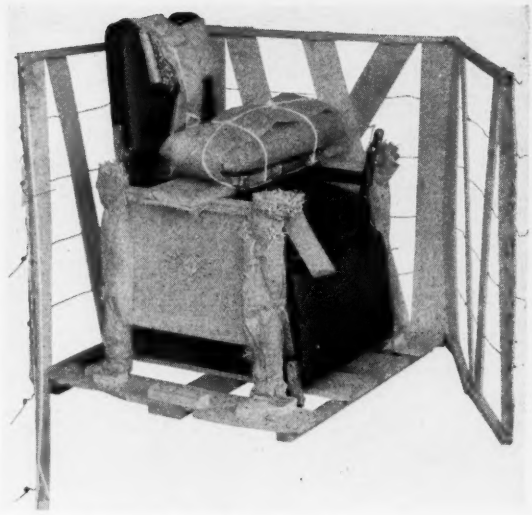
Paper excelsior used for protection and display

Paper excelsior impregnated with mineral oil reduced scald on fruit in storage from 65 to 4 per cent, according to the Department of Agriculture. This has made possible the packaging of produce without wrappers which heretofore destroyed the eye appeal of the fruit itself.

More and more food, cosmetic and novelty manufacturers are using brilliantly colored paper excelsior to dress up their packages. Notable examples have been Heinz, Armour, Beech-Nut and Kraft Cheese.

PACKING PADS

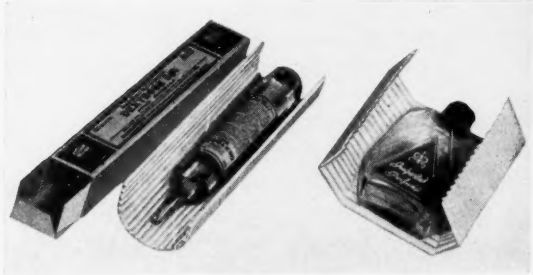
PACKING PADS consisting of a kraft wrapper filled with straw or wood excelsior have been a staple packing material for years. During the last two years, paper excelsior pads with sealed ends have been successfully used. In these there is no possibility of the filling sifting out and the absence of chips and hard wooden curls has eliminated marking. For furniture, ice-boxes, stoves, toys, tile, novelties, electrical appliances, etc., these packing pads give excellent protection at a minimum cost and permit faster, easier packing. They are manufactured in all sizes from $3\frac{1}{2}$ in. $\times$ 6 in. up to 15 in. and up to 72 in. in length.



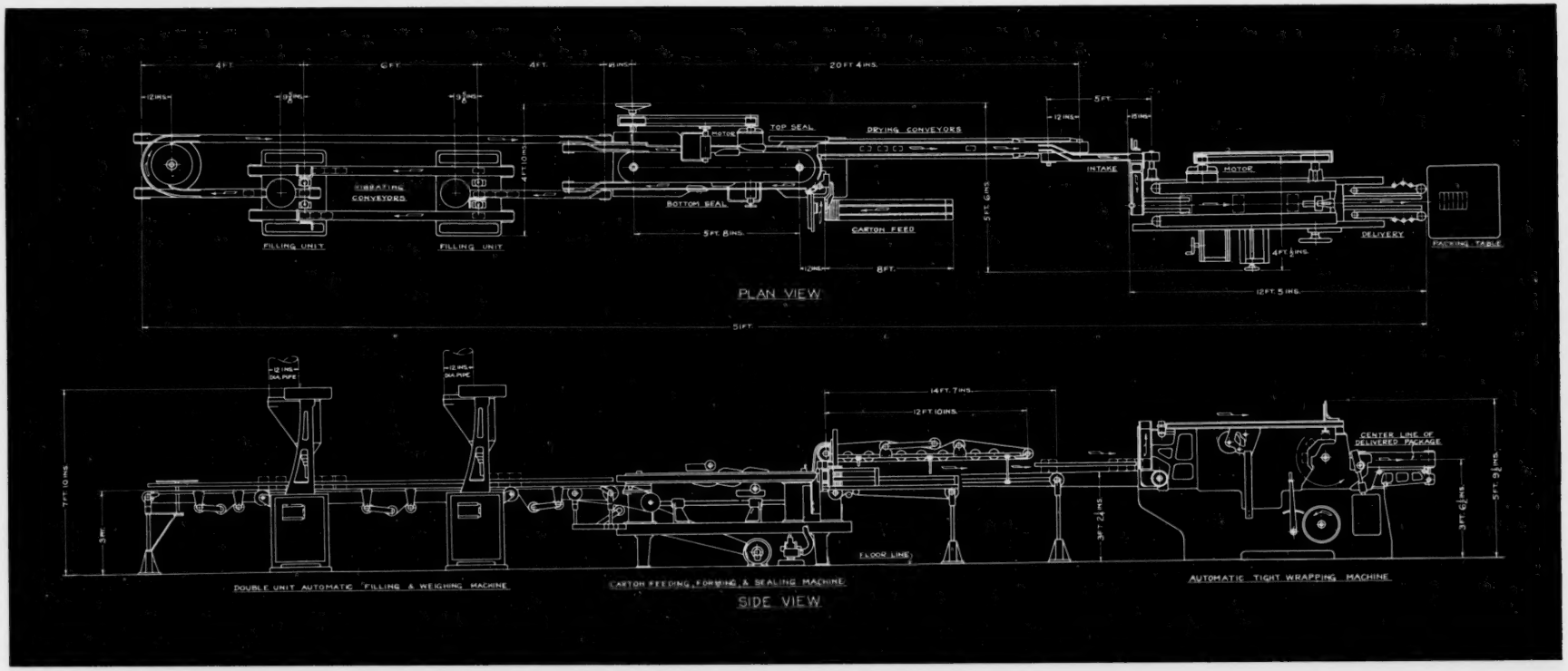
Packing pads as used for protection in shipment

CORRUGATED ROLLS

IN most factories and stores, corrugated paper is an almost indispensable item of the packing room. For shipping or mailing, a light strong package can be quickly made with corrugated paper. The high corrugations serve to give efficient protection against shock. Such paper is furnished in convenient rolls of 250 ft., 36 in. wide. Where a particularly fine appearance is desired, a sulphite corrugated paper is used successfully. This material gives both shipping protection and distinction and is obtainable in rolls that are $20\frac{1}{2}$ in. wide and up to 250 ft. in length.



Corrugated paper combines lightness with strength in shipping

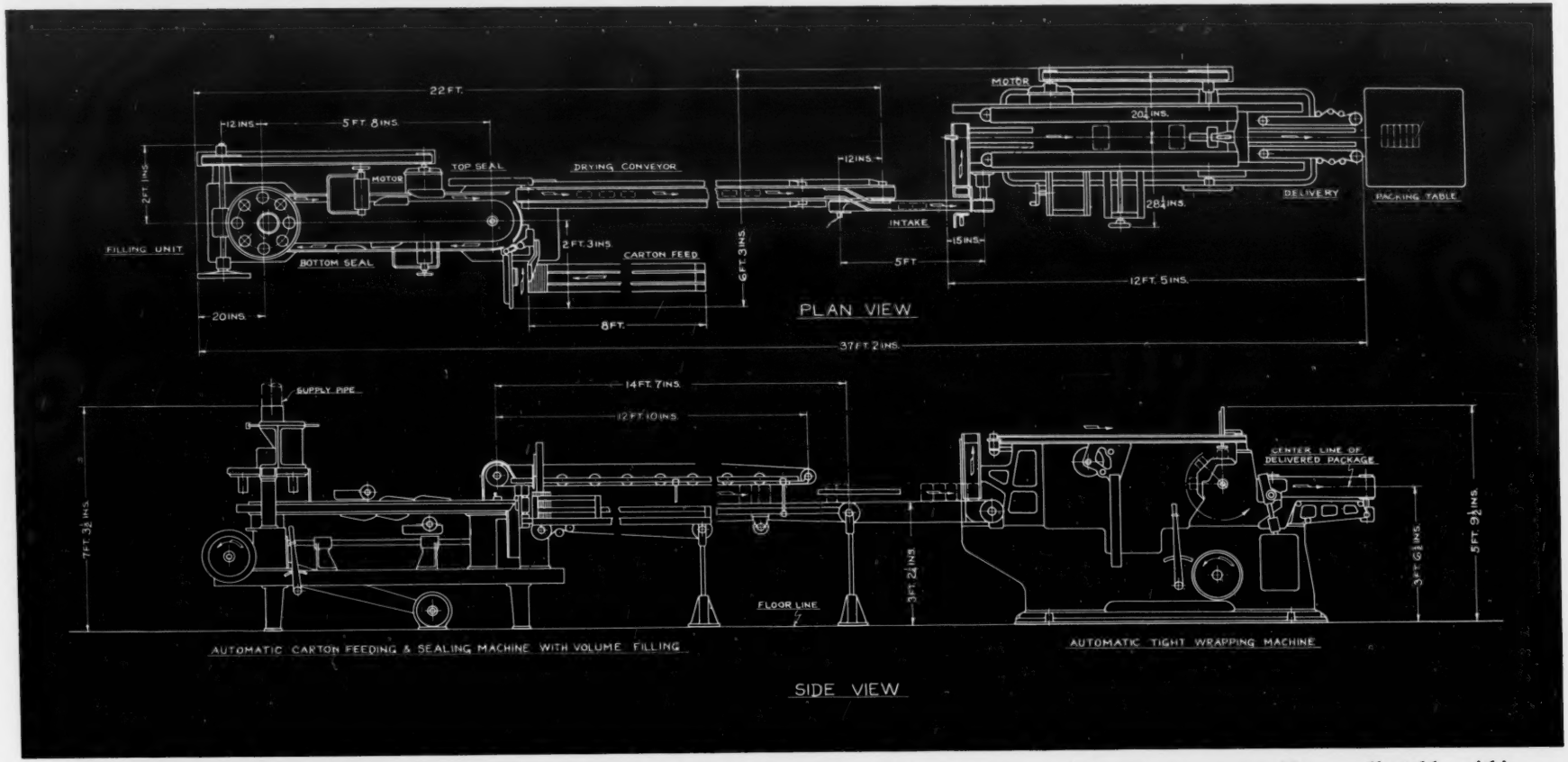


PLACEMENT OF PACKAGING EQUIPMENT

OF CONSIDERABLE importance is the proper placement of equipment in the packaging plant. Whether the operations performed are manual, semi-automatic or full-automatic, the arrangements of the several units should be such as to provide economy of floor space and permit the work of each operation to precede that following with maximum dispatch and convenience.

Above are illustrated floor and elevation plans showing a complete line consisting of an automatic filling machine and then connected with the automatic tight-wrapping machine. This equipment would automatically feed the cartons from a supply, bottom seal them, then carry the filled cartons on a conveyor belt into the filling machine where the cartons would be filled, either by gross weight or by measurement, the filling mechanism being suitable for powdered non-free flowing products. The filled cartons are then carried back into the sealing machine for top sealing and then into the tight-wrapping machine for tight-wrapping with the printed label. If a printed carton is used and not tight-wrapped then the line would be used without the automatic tight-wrapping machine.

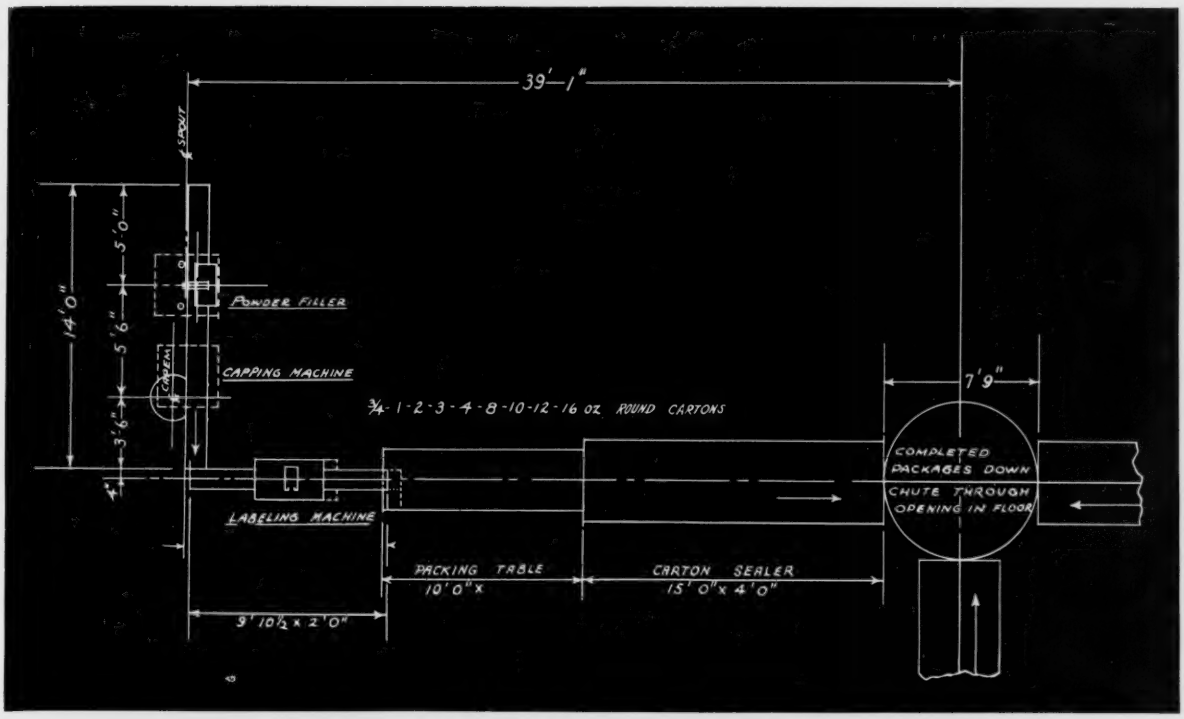
This line has a production up to 60 to 70 complete packages per minute. The machines are made in various styles and sizes and are changeable or adjustable within certain limits. The drawings from which the reproductions were made were furnished through the courtesy of the Stokes & Smith Company.



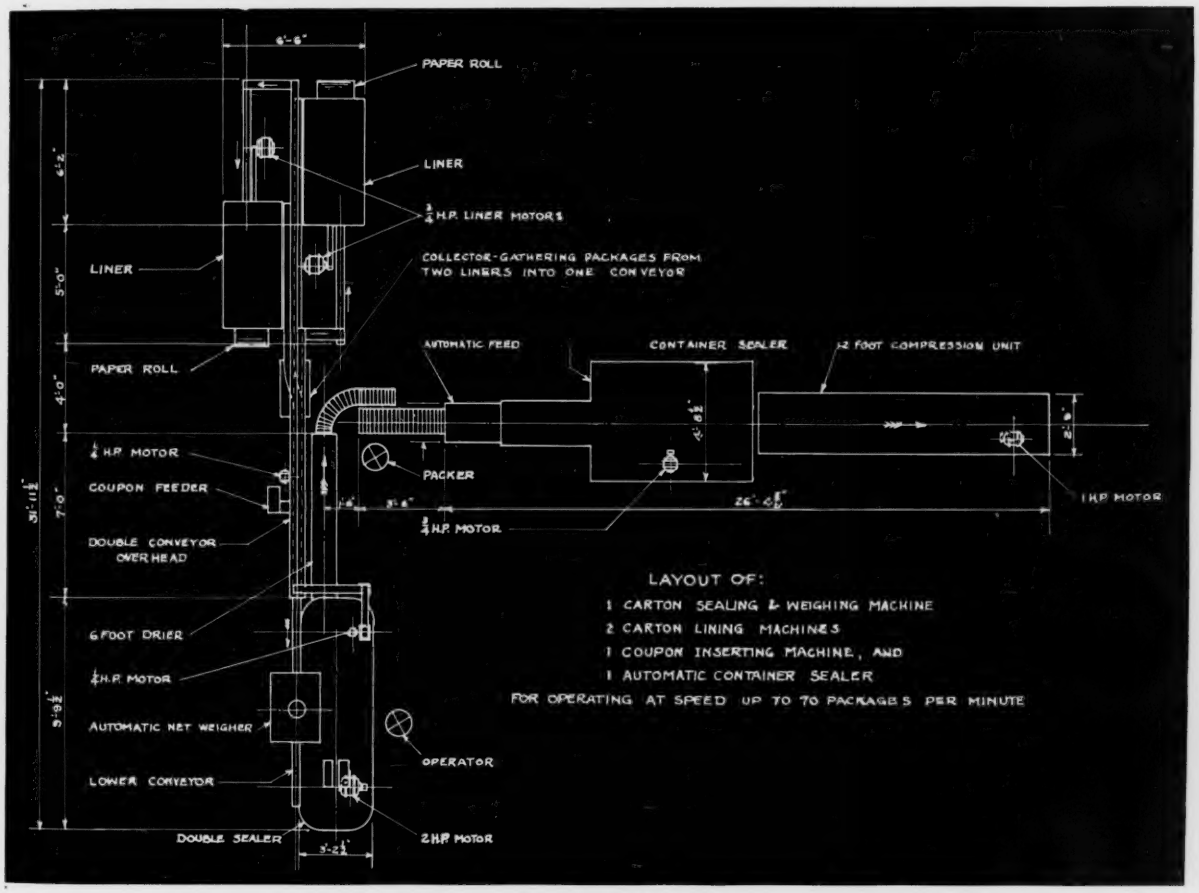
SHOWN above in floor and elevation plans is a complete packaging line which includes an automatic carton filling and sealing machine in combination with an automatic tight-wrapping machine. This line would automatically feed the cartons from a supply, bottom seal them and fill them with the desired amount of material, filling through special adjustable measuring flasks arranged in a turret mechanism, particularly suited for free flowing products such as salt, sugar, soap powders, etc. After filling, the cartons are automatically top sealed and carried on a conveyor into the tight-wrapping machine where they are automatically tight-wrapped with the printed label and discharged ready for packing in the shipping containers.

If a regular printed carton is used and not tight-wrapped then the same carton filling and sealing machine would be used without the tight-wrapping machine. This complete line has a production up to 60 to 70 complete packages per minute. The machines are made in various styles and sizes and are changeable or adjustable within certain limits. These drawings have been furnished through the courtesy of Stokes & Smith Co.

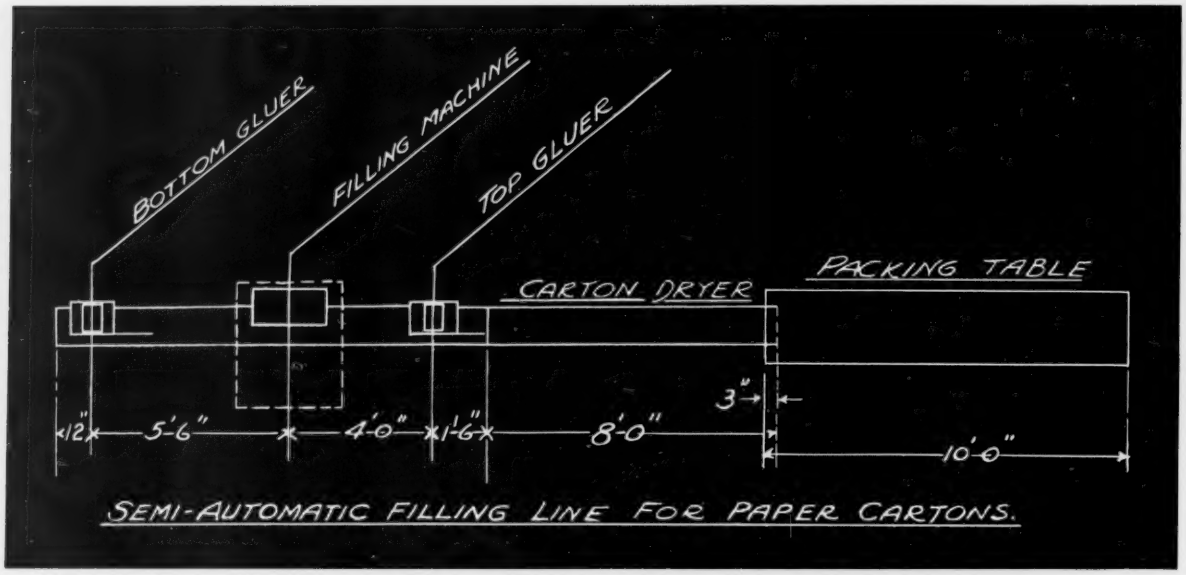
The following pages show similar diagrams which relate to typical installations of equipment for the packaging of both wet and dry products. In addition to the actual packaging units, frequent use is made of various types of conveyors. In the planning of any equipment placement it will be found of advantage to consult with the manufacturers of packaging machinery.



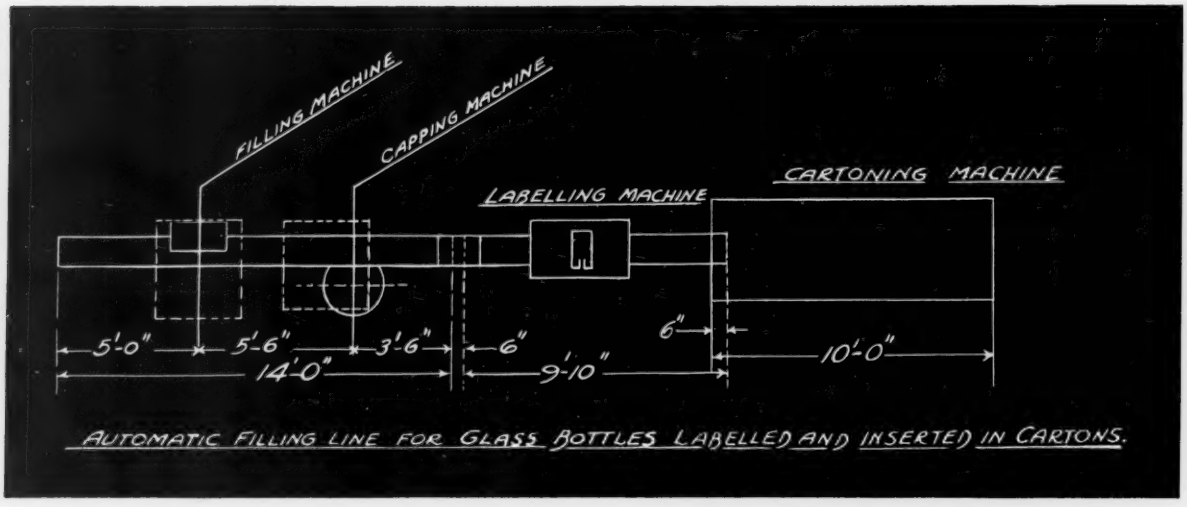
Installation for various kinds of dry materials. Three filling units discharge into one chute



Floor plan showing complete packaging line for cartons. Courtesy of J. L. Ferguson Company



Floor plan showing typical installation of semi-automatic equipment. Courtesy Consolidated Packaging Machinery Corporation



Floor plan showing typical installation of automatic filling line. Courtesy of Consolidated Packaging Machinery Corporation

CARTON AND CAN FILLING EQUIPMENT

DEVELOPMENT and perfection of automatic machinery enables the packer to obtain quantity production at lower costs, to standardize the sizes of his packages, and enable him to carry to the consumer, through the message printed on his package, a standard name of trade mark by which the consumer can again seek his particular brand of products. This insures the packer his reward for maintaining qualities.

There is no necessity for any manufacturer to depend on hand labor in assembling his package, as American machine designers have developed and refined automatic machinery for every packaging purpose to such an extent that today a machine is obtainable whether the packaging process follows standard practices or is of a special nature.

Inasmuch as machinery must be considered somewhere in all packaging production plans, the first consideration is the positive necessity for careful attention and preparation of the various component parts in the make-up of the package. All materials entering into the make-up of the package should be purchased with a view to their efficient handling by automatic machinery.

In considering a carton product, the size of the carton should be carefully worked out to obtain the

best dimensions for easy machine handling. The construction of the carton should be carefully planned to be sure that the side gluing seams are in proper position, and the side flap cut to the proper length. Careful attention to these details in the beginning will save both the packer and the machine manufacturer a great deal of trouble and grief when the time comes for installing machinery.

This does not mean that cartons, protective papers or labels for machine handling differ importantly from the same materials that would be used for hand packing. It simply means that there are certain necessary features and specifications to be followed to make sure that all materials will follow uniform lines. All cartoning materials handled on automatic machines are manufactured on accepted commercial standards, but it must be borne in mind that a machine is made of iron and steel, along fixed lines, and if the material fed to the machine differs in size and shape, then trouble is bound to ensue.

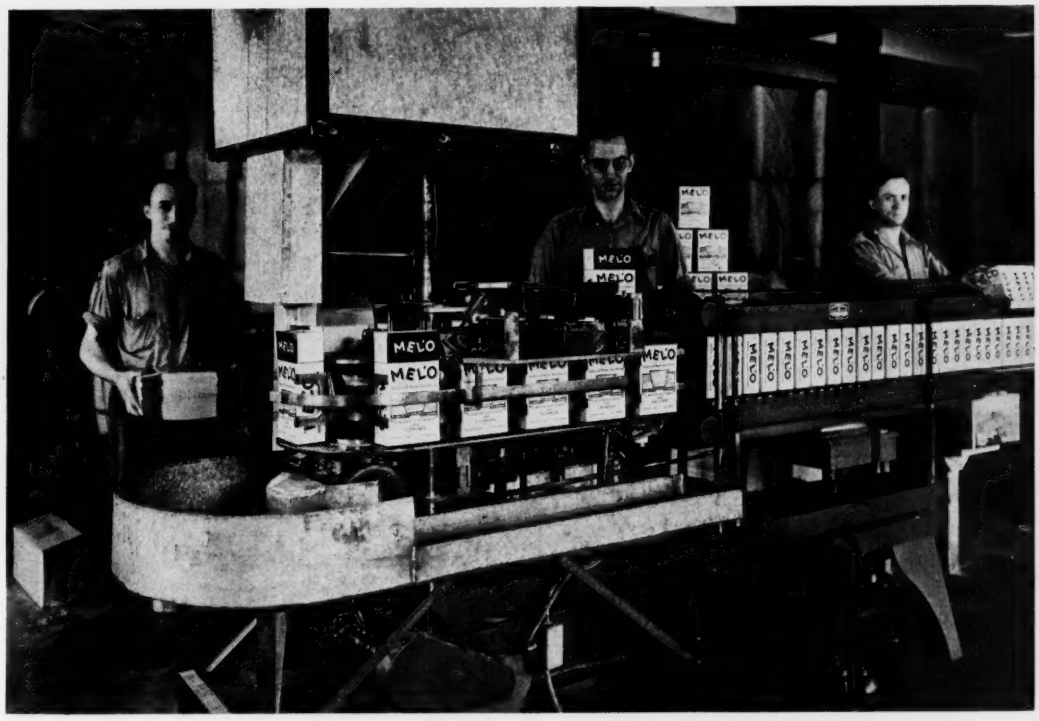
As an illustration, if sealing and filling were the only consideration, a carton might be planned to obtain the largest possible face, perhaps because an advertising advantage might be seen. In doing so, the base of the carton would necessarily have to be narrow, so much so that when handled on a machine, this narrow base would mean a constant tipping of the carton, with its attendant troubles and delays.

Any manufacturer of automatic packaging machinery will be glad to furnish definite specifications covering the construction of cartons or the make-up of labels. Securing these details will save many weeks of labor later on when machine production is planned both on the part of the packer and the machine manufacturer.

Many packers hesitate in the beginning to think of using machinery, believing that automatic machinery will prove too expensive for their purpose. Investigation will prove this is not true, as machine manufacturers are able to furnish equipment that will economically fit in with the requirements, not only of the larger packer, but also with the packer whose output is small.

The market today offers everything from inexpensive semi-automatic equipment, which operates at comparatively low speeds, to the highly specialized, fully automatic equipment, operating at the higher speeds, and no matter which class of machinery is used, they are all planned so that with their use outputs can be obtained more efficiently and economically than by hand labor.

Packers just establishing a carton packaging business can install a semi-automatic carton sealing machine. This would require the services of an operator and would produce from 12 to 15 satisfactorily sealed cartons per minute. For the weighing operations, he can obtain a small semi-automatic weighing machine which will operate at the same speed as the carton sealing machine. These two machines can be hooked together by connecting conveyor belts so that, as the cartons are sealed, they are automatically passed along to the weighing machine. An operator would be necessary at the weighing machine, but even considering the investment of the two ma-



Carton sealing machine equipped with double unit net weigher. Courtesy J. L. Ferguson Company

chines, the upkeep charges and the labor costs of two operators, packages can be produced at a far less cost than the same number can be produced by hand.

As outputs increase, speedier and more fully automatic equipment will be needed. The semi-automatic machines can then be discarded in favor of a battery of machines with which can be performed the entire operation of picking up the cartons one by one, feeding them to the sealing machine, then automatically passing them to the weighing machine and, after the material is weighed and filled into the sealed cartons, passed to the sealing machine for closing and sealing the tops.

Should the product be of a character to require extraordinary protection against atmospheric or other conditions an inner paper bag liner would have to be used. This lining would require an additional machine placed between the bottom sealing and weighing machine, the lining machine taking paper from a roll, cutting off the proper length, forming the bag and inserting the finished bag into the carton.

A set of machines of this character would make the entire packaging process entirely automatic, only one attendant being necessary to see that the machines are kept in good running order.

Equipment as above described can be expected to deliver thirty complete sealed, lined and filled packages per minute.

For the packer whose output exceeds 15,000 packages a day, equipment of higher speeds will be necessary and equipment at 60 packages per minute will interest him. This high speed equipment performs the same operations in the same manner as described for 30-per-minute equipment in the same general line-up; each individual machine, however, is more sturdily and elaborately constructed and, naturally, this heavier equipment is considerably more expensive than that of operating at the lower speed of 30 per minute.

The equipment just described would be used by the manufacturer packing in the plain printed carton, used without any outer wrapping. Materials such as tea, coffee, spices, sugar, rice, borax, cocoanut, drugs, poultry and stock remedies, macaroni, starch can be packed without any further protection than the printed carton with often an inner lining.

The foregoing treats of rectangular packages only. Separate types of machines are necessary for producing round packages, but as in the case of the rectangular package, automatic machinery can be obtained for every process in the make-up of the round package, first weighing material and filling it into the package, then applying the cans and labeling.

Round packaging equipment is manufactured in various types, ranging from the semi-automatic at slow speeds to the high speed, fully automatic equipment operating at a speed of 60 per minute.

The weighing machine units include those that will weigh gross, that is, including the weight of the container with the weight of the goods; others that weigh the material net. This is accomplished by weighing first in calibrated and balanced receivers, after which the material is poured into the waiting containers. Net weight weighers are particularly desirable where the material handled is of an expensive nature and extreme accuracies desirable. The saving in wastage alone with this type of machine often pays the cost of the machine in a short time.

Practically every labeling need can now be met with machinery of standard construction. This includes loose labeling machines, which apply the label loosely around the can, just applying the glue at the seam of the label or a rim of glue around the top and bottom of the label. Types of loose labeling machines are manufactured for labeling either round or rectangular cans. Then, there is the shrink-tight labeler, which is necessary for use when cans with high outstanding beads are to be labeled, those similar to the standard baking powder cans, or where the covers of the cans are of larger diameter than the bodies. Loose labels cannot be used with this type of can, for the reason that the high outstanding bead or the larger covers hold the label away from the body of the can, producing unsightly wrinkling, and a label only half attached.

The shrink-tight labeler overcomes this difficulty by passing the label through a bath of tepid water. This allows the label paper to stretch, the stretch in the label paper being about $^3/_8$ in. to the foot. Adhesive is then placed over the entire unprinted surface of the label while it is wet; it is then carefully registered around the can, which is passed along to an automatic dryer. The air in this dryer is heated. A series of revolving shelves move slowly around, so that the label dries gradually and, in so doing, shrinks tightly around the high outstanding bead or the oversized covers, as the case may be, without the slightest wrinkle, and insuring the covers being held tightly to the bodies of the cans, eliminating any possibility of leakage. About one-half hour is required to make the journey around the dryer, after which the can is automatically ejected and is ready for subsequent packing operations.

Practically all types of carton packaging, filling, wrapping or labeling machines are constructed so that they can be adjusted to several different sizes of cartons within reasonable range. Different commodities can be handled on the same machine where the characters of the commodities do not change too radically. This is done by fitting the filling machines with hoppers especially designed to meet the requirements of the different products.

Care should be taken when purchasing machines to choose manufacturers who can assure a reliable service that will maintain the machines in good working condition, and so guard against any break in packaging operations which will curtail output.

METHODS OF ASSEMBLY IN CARTONING MACHINES

by Charles L. Barr

FOR several years now manufacturers of cartoning machines have been concentrating their talent to develop greater speed and greater efficiency. This concentration of attention has produced the smooth-running, highly efficient cartoning machines that all prospective purchasers of this type of equipment have come to take as a matter of course. Speeds of 150 per minute have become rather common, and 200 per minute and even higher in some few cases is an actual fact.

While improvement in speed and efficiency has been the chief objective, this could only be achieved through general refinement in design—a careful and intelligent study of each element and mechanism and motion. As is invariably the case, the incidental improvements are perhaps of greater interest than the principal objective. These incidental improvements—quietness in operation that contributes so materially to employee efficiency, and smoothness that adds years to useful life, greatly reducing upkeep cost—are tremendously important contributions although not quite as spectacular as the progress made in the matter of speed.

It seems now, however, that purchasers of cartoning machines find available machines capable of greater speed than they are able to use and, as a consequence, manufacturers have turned their design attention to the matter of adapting their machines to meet unusual conditions—to produce the out-of-the-ordinary packages or to operate under out-of-the-ordinary conditions.

The products shown in the illustration, together with the following descriptions of the packages and their method of assembly in cartoning machines, strikingly illustrate what has been accomplished.

"Beechies." Candy coated chewing gum tablets dumped in a hopper are automatically fed and counted out in groups of twelve. Transparent cellulose window cartons are fed from a magazine, opened up, twelve tablets inserted and the carton closed by tucking the end flaps.

"Glazo." Bottles are brought in upright, without handling, from the previous operation and are automatically laid over on their sides preparatory to

Cartoning operations for these packages are described in accompanying text

cartoning. Circulars are fed from a magazine, folded properly; cartons fed from their magazine, expanded; circular and bottle inserted and the carton closed. A color card is inserted automatically inside the carton.

"Pro-Phy-Lac-Tic" Tooth Brushes. The unusual feature of this package is the provision made for showing the brush itself through the carton. The cartoning machine manufacturer found it possible to adapt machine to carton at a high rate of speed.

Rockwood Baking Chocolate. The machine automatically wraps each half-pound cake of chocolate in dry waxed wrapper, cut from a roll, and then automatically cartons it in the characteristic bevel-edge carton. Work is done at a high rate of speed.

Franklin Baker Shredded Coconut. A condition to be eliminated in the packaging of this product is loss of moisture. Coconut is weighed out and placed in glassine paper packets similar to the packets used for certain types of tobacco. These packets are automatically carried into the cartoning machine on a conveyor belt. The cartoning machine is equipped with means for cutting a waxed wrapper from a roll, wrapping the packet in a special manner, sealing this wrapper; feeding a carton from its magazine, inserting the wrapped packet and closing the carton by gluing the end flaps. Machine is also equipped with means for automatically stamping date.

"Encore" Egg Noodles. The cartoning machine is equipped with a long conveyor made up of metal pockets. Each pocket is lined with a dry waxed paper wrapper, automatically cut from a roll. The product is weighed out and dumped into lined pockets, after which the wrapping is completed; carton fed from a magazine, product inserted, carton closed by gluing and date stamped on carton.

Pond's Face Cream Tubes. One of the latest types of high speed, highly efficient cartoning machines produces this package. Circular is fed from a magazine, folded properly, inserted with tube into carton and carton closed by tucking end flaps at a speed of 150 per minute.

McKesson & Robbins Milk of Magnesia. Adjustable machine, both 8-oz. and 16-oz. sizes being produced on the same line. Unusually large circular fed from magazine, folded and inserted with bottles into carton, which is closed by tucking end flaps. Bottles are brought into the machine upright, without handling, from previous operation.

Campana's Italian Balm. Adjustable machine for 35- and 60-cent sizes. Bottles brought in upright, without handling, from last previous operation. Circulars fed from magazine, properly folded, inserted into cartons, which are closed by tucking.

"Good Luck" Rings. Rubber jar rings are stacked in magazines from which they are fed automatically in groups of twelve. Cartons are fed from their magazine, expanded, groups of twelve rings inserted and cartons closed at a speed of 120 per minute.

"Magic Wand Egg Dye." A wooden forked paddle, the forked ends of which are impregnated with a wax coloring material for use in dyeing Easter eggs, is inserted into the carton along with two pieces of advertising material. The carton is stamped with the date of production in code, and then closed by gluing the end flaps. Speed, 125 per minute.

"Sample Beechies." Candy coated chewing gum tablets are dumped into a hopper, counted out in groups of two, carton fed from magazine and the groups of two pieces of gum placed in the carton, and the carton is closed by gluing the bottom end flap and tucking the top flap, assuring a securely formed package that is easily accessible. Speed, 130 per minute.

"Red Cross" Gauze Bandages. Machines are unique in that they are adjustable to handle in some cases three packages and in other cases as many as five packages. Adjustments are so standardized and plainly marked that to change from handling one size to another size requires five to ten minutes.

"Mum." One of the latest type, highest speed, machines, feeds the tins automatically, folds a circular and inserts tins and circulars into tuck cartons. Speed, 150 packages per minute.

V620 Kodak Film. The new type high speed photographic film requires careful protection from moisture. One of the latest type high speed cartoning machines is being arranged with means for automatically wrapping each film roll in a wrapping material that is highly resistant to moisture penetration, sealing this wrapper and inserting film rolls so wrapped and sealed into the cartons. Means are also provided on cartoning machine to automatically print on the carton the date before which the film should be used.

La Rosa Macaroni Products. The cartoning machine used is arranged with a long intake conveyor consisting of a series of metal pockets. Each pocket is lined with a dry wax paper wrapper automatically cut from a roll by the machine. Along this conveyor, operators weigh out the proper amount of product and place the proper amount in each pocket of the conveyor that has been lined with the dry wax paper wrapping material. As this conveyor carrying the material progresses forward, the contents of each pocket are wrapped, and then cartons are fed from a magazine, the wrapped contents of each pocket inserted into the cartons and the cartons closed by securely gluing both end flaps.

Licorice "Cigarettes." Long tubes of product are fed into machine by operator. The machine cuts these tubes, or sticks into the proper length, approximately $2^{3}/_{4}$ in., discards the scrap and counts out the proper number of cigarettes which are placed in cartons. Cartons are closed by tucking the end flaps.

Licorice "Snaps." A new type, high speed, cartoning machine recently developed handles this product, and is adaptable to the automatic cartoning of similar loose products. The cartons are fed from the magazine, formed up, the bottom closed, and then placed in a conveyor that carries them along in a vertical position rather than in the usual horizontal position. The contents of the carton are automatically measured out and dumped into the carton as it progresses along in the conveyor, then the top of the carton is closed by tucking the flap.

Grove Proprietary Medicines. Machine is arranged to carton a number of different products. One of these products is sold in a collapsible tube and the others in bottles. The bottles are fed in automatically from the ordinary straight line labeling machine, tipped over in a horizontal position, inserted into the conveyor pockets, circular and bottle inserted into the carton with circular over the top.

AUTOMATIC WRAPPING MACHINES

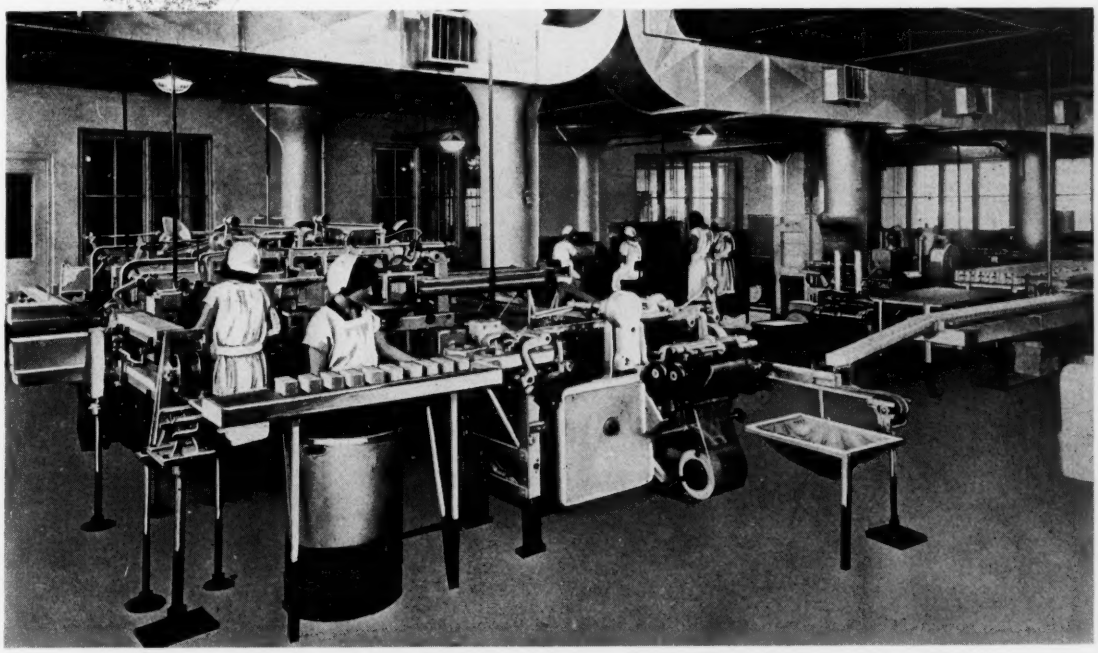
THE year 1933 has been chiefly one of refinement and improvement in the automatic wrapping machine field. The alert manufacturer of package goods has realized more than ever the importance of the package itself in selling his product and has given particular attention during the past year to improving its appearance and protection and to increasing its convenience to the purchaser.

One of the important influences bearing upon improved appearance has been a further development of the process of printing on transparent cellulose. The beautiful effects now obtainable have served to popularize further this form of wrapper, but its increased use has brought new problems to the wrapping machine manufacturer. For mechanical application, this wrapping material must be used in rolls—no satisfactory method has yet been found for feeding it in sheets. The development of the photo-electric cell or "electric-eye" form of control for accurately registering printed transparent cellulose is no longer new, but its spread into new fields has brought demands for high speed and accuracy of registration that have hitherto been impossible with existing mechanisms.

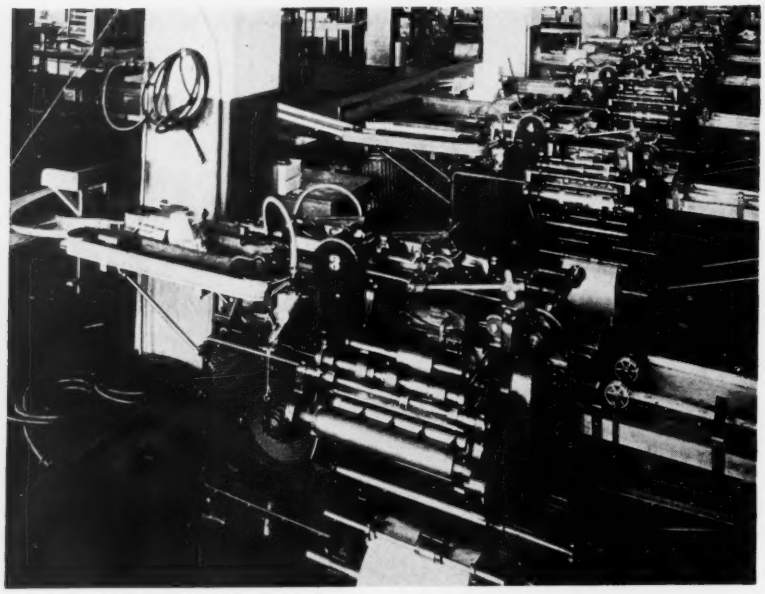
Up until this year, the electric eye could be used only on intermittent paper feeds. The application of the eye principal to a continuously moving web of paper has greatly increased the speed of registration and opened up new fields for this form of wrapping. While the present development has not gone much beyond a speed of 300 a minute, higher speeds are contemplated and will undoubtedly be worked out in the near future.

A further refinement in the wrapping of packages has been the development of easy opening devices. A properly sealed transparent cellulose package is sometimes rather difficult to open and various schemes have been devised to make this process easy and without in any way destroying the effectiveness of the wrap. For one chewing gum manufacturer, who is putting a transparent wrapper on the outside of his package, a special device has been made which puts a fold or pleat in the cellulose and cuts the wrapper in such a manner that a tab extends slightly beyond the edge of the package. By pulling this tab, the transparent cellulose tears easily and neatly and the wrapper can be removed without any trouble.

For another chewing gum manufacturer a somewhat more complicated device has been made. A narrow strip of paper tape is placed inside the wrapping but is so arranged that one end is left outside. A pull on this tape tears the end off the outer wrapper so that the individual sticks can be removed. This same manufacturer is using an outer wrapper of printed transparent cellulose which closely resembles his former printed wrapper and this is in addition to a piece of reinforced foil that is first placed around the five sticks. A small hole is punched both in the foil and the transparent wrapper to accommodate the end of the tape but these holes are so placed that they come at the overlap of these wrappers and do not de-



Automatic wrapping and bundling units at Bristol-Myers Company plant. Courtesy, Package Machinery Company



Battery of wrapping machines, Loose-Wiles Biscuit Co. Courtesy, Package Machinery Co.

stroy the effectiveness of the airtight seal. A more complete description of this operation will be found on page 109.

In the field of adjustable wrapping machines still further advances have been made. The feature of adjustability has probably been brought to its furthest state of advancement in bread wrapping machinery where changes in sizes can now be made rapidly and without the use of extra parts. A machine recently developed primarily for the wrapping of bread has been adapted for cartons, particularly the large sizes used by the biscuit manufacturers, and the ease with which this machine can be changed for different sizes is far beyond anything so far developed in this line.

New packing machines installed by the large cigarette companies have required higher speed in transparent cellulose wrapping. A new machine has been developed to run at 150 packages per minute, thus synchronizing perfectly with the speed of the new packers.

While it cannot, strictly speaking, be called a wrapping operation, a new means for sealing the tops of milk bottles in transparent cellulose has been perfected. By means of this development transparent cellulose is unwound from a roll, cut into a square sheet and drawn tightly over the neck of the bottle and then held in place by means of a waterproof paper tape. This has made available a new merchandising idea for the milk industry and quite a number of successful installations have been made at various dairies.

Minor changes and improvements are constantly being made in existing wrapping machines as they must keep pace with increased speed of production and the demand for better packages.

Dozen or half-dozen packages are bundled by machine.

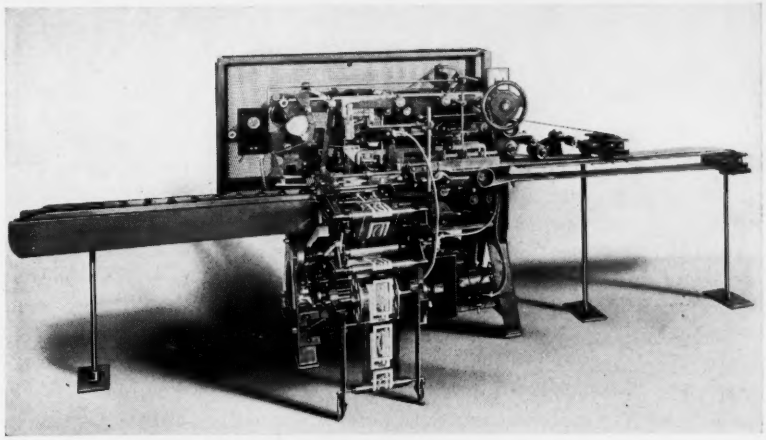
WRAPPING PACKAGES BY PHOTO-ELECTRIC CELL

MANY manufacturers who are packaging food and other products in cartons and wrappers are today making use of photo-electric cell controls which are incorporated in the wrapping machines.

All food products that need protection have usually obtained that protection by wrapping the printed carton in a sheet of paraffine paper or some other protective paper. This outside wrap over the printed carton was, of course, obtained in as transparent a sheet as possible. However, there were objections to the message on the printed carton being obscured by a semi-transparent sheet on the outside of the carton. The following will serve as one instance in which this objection was successfully overcome by the manufacturer.

Heinz Rice Flakes contain about 15 per cent more cellulose than the average flake of its kind. This means that they are much more susceptible to moisture absorption and will go "stale" much quicker than the average flake. Accordingly, the Heinz people made sure to protect their product, and in the original package they used a printed carton with a waxed paper liner. In addition to the liner the flakes were further protected by two sheets of extra-transparent paper wrapped and sealed around the carton. These two sheets of semi-transparent papers, however, obscured the printing on the carton.

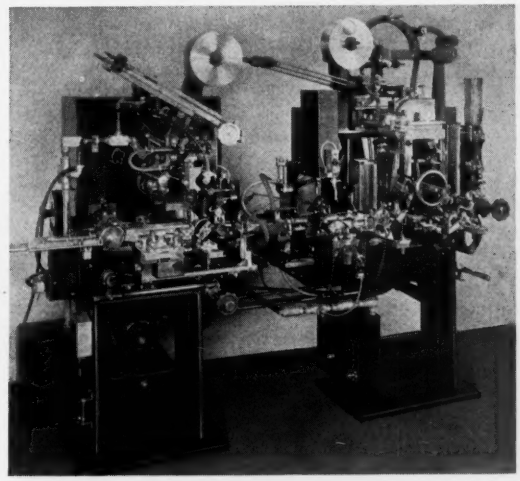
It was then proposed to print the outer wrapper of waxed paper and leave the carton plain. But it was found on wrapping the cartons that only occasionally would the design on the paper register in the proper place on the cartons. Any error in registration would continue to multiply itself rather than correct itself so that before long the design that should have been on the face of the carton was on the top of the carton. Obviously this type of wrapping could not be adopted unless some way could be suggested to keep the registration in place.



For wrapping regular or irregular shaped candy bars in printed transparent wrapper. Electric-eye registers the printed design on the bar. The machine is adjustable for various sizes. Courtesy, Package Machinery Company

This solution was found in the application of the photo-electric cell and corrective mechanism which incorporated this device was placed on each of the automatic wrapping machines. Since the Heinz company put out this package many others have become interested in it, and some of the most recent examples of photo-electric cell wrapped packages which are to be found on the market are the following: Goodman's Matzos, Educator Toasted Cheese Thins and Kellogg's Corn Flakes.

Another example in which the photo-electric cell is utilized to obtain accurate registration of a wrapper on a package is that which is now in use at the plant of the American Chicle Company. Here machines, recently installed, perform a complicated operation in wrapping gum at high speed. Single sticks of gum first are wrapped in waxed paper and banded at a speed of about 600 per minute. The waxed paper is folded on the ends, each stick is banded, and the band is glued. The sticks are then stacked up in piles of five, and are wrapped in a second covering of glassine-lined or reinforced foil.



Wrapping machines equipped with photo-electric cell

Before this foil is applied to the package, a hole is punched in it; a strip of wax is printed on it to make the seal; and a tape, run through a wax bath, is applied and stuck inside. The foil's cut-off is such that the tape sticks up through the punching and, on account of the wax, sticks to the foil on the inside, and will not slip out. The package passes through apparatus which makes end folds and applies wax as they are being folded, thus making a practically hermetically sealed package.

After this, the package is carried automatically through cooling apparatus to set the wax, and into a second machine which wraps it in printed transparent cellulose, the feeding of which is controlled by a photo-electric cell within $1/64$ in. plus or minus.

The "electric-eye" enables correct placement of printed wrapper

TIGHT WRAPPED PACKAGES

by Carl E. Schaeffer

THE tight wrapped package is now a standard type of package with many manufacturers and packers of food and grocery products. This type of package was first adopted a number of years ago by some of the cereal manufacturers, where its greatest advantage was in keeping the weevil from getting into the contents. This style of package proved so satisfactory for cereals that it has been adopted for use with many other products, such as flour, soap powders, salt, coffee, etc.

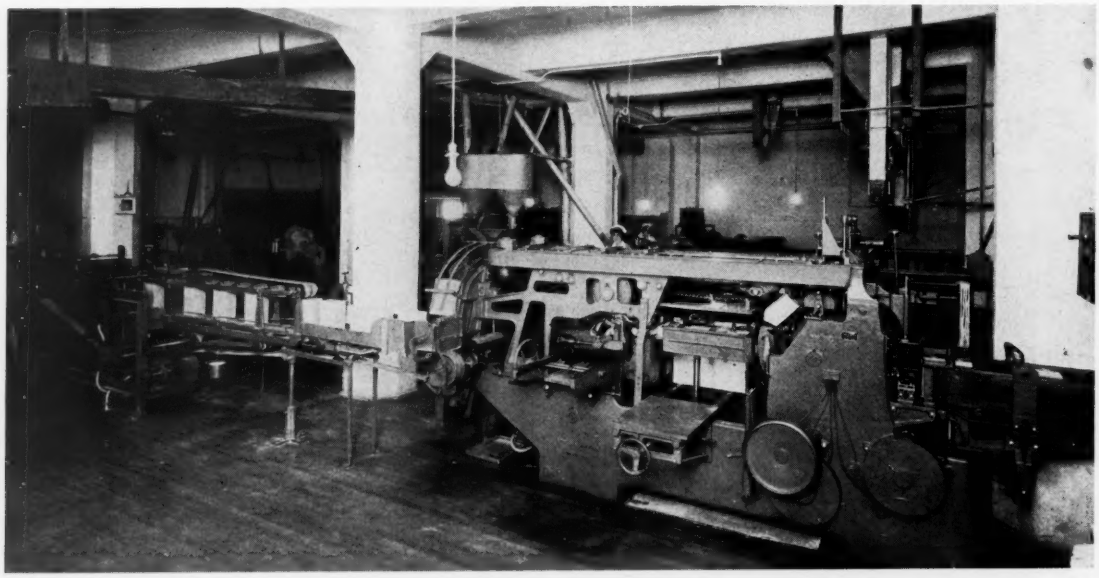
Various types of cartons with inside bags or liners can be used with the tight wrapped package, as well as different types of opening devices. In the salt industry the tight wrapped package is now being used by many of the leaders, and one of the most satisfactory salt packages is a carton made of asphalt-lined board which is tight wrapped on the outside. For coffee, wax or parchment paper liners are generally used on the inside of the carton and the cartons are tight wrapped on the outside. For flour, the regular chipboard carton is used and some of the packers have these made with a blue lining on the inside which gives a whiter color to the flour. Various combinations of cartons, liners, and labels can be used to insure the product getting to the consumer in the best possible condition.

Another advantage of the tight wrapped package is for the packer or manufacturer who packs private label brands for different customers. If he uses the tight wrapped package he can use the same carton and merely have different labels for the different brands. This means a saving as it is not necessary to carry a number of different printed cartons on hand. With the tight wrapped package various types of labels giving different styles of end folds can be used to suit the conditions. Some labels are die-cut so that each end flap of the label is glued down separately. Others are rectangular, making a gusset fold on the end.

Recently the varnished label has been adopted by a number of packers and manufacturers using the tight wrapped package, and the package tight-wrapped with the varnished label makes an ideal container for many food and grocery products. The varnished surface makes the package attractive, the colors show up to advantage and the varnished surface will not accumulate dirt or dust as quickly. Also, the package is more moistureproof as the varnish gives the extra coating on the outside.

The machines for tight wrapping packages are built in different styles and types to suit the conditions. There is a semi-automatic machine which is hand fed and adjustable for different sizes and has a production of 10 to 15 tight wrapped packages per minute. Then there is the fully automatic machine usually built for one size package to be wrapped and has a production of 60 to 70 tight wrapped packages per minute.

With the tight wrapped package the plain unprinted cartons are filled and sealed in the regular way, there being a number of different makes of semi-automatic and full automatic carton filling and sealing machines on the market. After the carton is filled and sealed it is fed into the tight wrap-



Tight wrapping installation at plant of Albers Brothers Milling Company, Oakland, Cal. Courtesy, Stokes & Smith Company

Group of tight wrapped packages for food and household products

ping machine which automatically feeds the paper label as the carton enters the wrapping machine, glues the label all over on the blank side with a thin coating of adhesive and wraps it tightly around the filled carton, making a perfectly tight sealed, non-sifting, weevil-proof, and attractive package. This package costs practically the same as, or possibly a little more than, the printed cartons, but there are so many advantages in the tight-wrapped package which more than offset any slight additional cost. Some of these advantages are:

Better appearance of the package, stimulating sales. Printed or lithographed colors show up to better advantage on paper labels than when printed directly on cardboard.

Greater strength. The wrapper glued tightly to the carton strengthens the package, especially at the corners where there is generous overlapping of the paper for extra reinforcement.

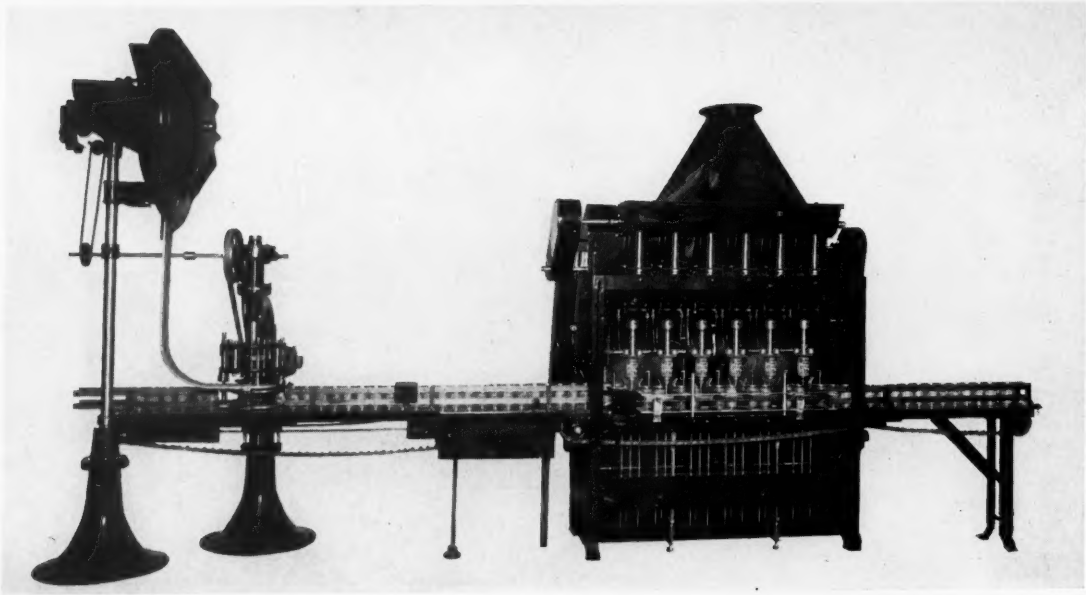
Better preservation of contents. The contents of the package are fully protected against dust, odors, weevils, etc., and there is no loss from leakage or sifting so that the package and its contents reach the consumer in perfect shape.

METHODS OF DRY PRODUCT FILLING

by A. J. Sterling

DRY PRODUCT FILLING is fundamentally divided into three distinct classes of machinery or methods: packing—wherein the quantity is determined by the density in the container; volume—wherein the quantity is determined by measuring the material by means of a definite number of turns of an auger; weighing—wherein the quantity is determined by scales but equipped with force feed into buckets and a settling conveyor.

The construction of machinery to accomplish any of the described methods varies according to the individual manufacturer and his engineering capabilities. Some of these machines are more complicated than others and it is well, therefore, to remember that simplicity of construction and performance is



Multiple head powder filler and automatic capper. Courtesy, Consolidated Packaging Machinery Company

that which stamps fine engineering and longevity of the machine with the least possible amount of expenses for upkeep. It is this simplicity of construction that goes far toward procuring exactness in weights. Too many cams, electrical contacts and unnecessary movements bring about the reverse of exact weights and the need of too many mechanics.

All dry materials can be divided into two general classifications—free flowing and non-free flowing materials. In a way, the names of these two divisions are self descriptive, but there are many kinds of materials which apparently are free flowing but as a matter of fact cannot be so classed. Practically all free flowing materials can be weighed, whereas the usual method of measuring non-free flowing materials is either by volume or by packing. Each one of these general classifications has many divisions and, as might be expected, the dividing line between the divisions with some kinds of materials is very finely drawn.

Hoepner Model 41 round carton filler

Referring to the free flowing materials, we find the range from very coarse materials that have no tendency to stick or arch down through to the so-called free flowing materials which need some assistance in the form of agitation or pressure to make them flow freely into buckets. Of course the type of machine will depend somewhat upon the character of the material, but in general all of these types of materials can be automatically weighed. Practically all types of automatic weighing machines work on the principle of weighed load shutting off the flow of material into the weighing bucket. This means that there must always be a certain amount of material between the load in the bucket and the cut-off point and the accuracy of weighing is dependent on the uniformity of the flow of this stream of material and the quickness with which the mechanism operates to cut off the flow from the action of the descending bucket.

The problem of handling non-free flowing materials is more complicated as the differences in the character of the materials are more marked than in free flowing materials and the characteristics of the non-free flowing materials cause more difficulty in handling it.

There are two methods of filling non-free flowing materials: first, by packing, and second, by volume filling. In certain cases the material is required to

be put into containers with greater density than the normal conditions of the material would permit, and in such instances the material is *packed* into containers. The amount which goes into the container is determined by the density of the material in the containers, and when the required density has been obtained the feeding mechanism is tripped so that the flow of material is stopped.

When the amount of material required in the container is not greater than that which can be held with the material in the normal condition or with a small amount of settling, the method of volume filling is used. This is really a measuring method and when the proper amount has been measured out the mechanism is stopped. One of the great advantages of handling materials by the packing method is that in a material where the consistency is constantly changing the variation in volume will be automatically taken care of because the amount of material is based on the density of the pack rather than on the amount of material in a certain volume. The volume method of filling is sufficiently accurate for materials of uniform consistency.

There are some kinds of material which have some characteristics of free flowing and other characteristics of non-free flowing materials, and in handling these kinds a combination of net weighing with volume filling is employed. It is hard to lay down definite rules for classification of materials because there are so many varying elements entering into the determination.

Therefore it is well when endeavoring to choose a machine suited for the particular work at hand to study the problem thoroughly and to submit it to some manufacturer well known for his accuracy and for the work that he has done in similar fields. That which may have been accomplished, in what appeared to be the same as your particular problem, may be accomplished in the same manner and yet may require entirely different treatment.

BOTTLE FILLING EQUIPMENT AND METHODS

by E. E. Finch

TWENTY-FIVE years is not a very long time when one looks back upon it, not nearly as long a period as to look forward that length of time. In 1908, writers of quips and jokes used to predict amusing, unusual and often what seemed to be the impossible things that would happen to us and that we would do in the year 1933. Their most vivid imagining and what then seemed to be the most grotesque sort of a picture failed to truly visualize all the things that have come to pass in the last twenty-five years. Our modern automobiles, our airplanes, radios, modern skyscrapers, and to be a bit more prosaic, our modern methods of manufacturing and merchandising, far outstrip the most vivid imaginings which were thought of twenty-five years ago.

We do not believe it necessary to discuss in detail bottling equipments that were popular twenty-five years ago or twenty years ago. It is true that there are certain methods, truly hand-operated methods that were popular in those bygone days that are still in use or operation. One of the interesting and startling conditions exists today in the thoughts of those who are contemplating the re-entering of the whiskey business along the line of bottling. Early in the fall of '33, the distiller who was contemplating re-entering the whiskey business and bottling of that product, pictured to himself an equipment similar to what he used in 1910, or '14 or '16. He visualized generally a production of 200 or 300 cases a day in a bottling plant. He anticipated the use of corks in bottles and the same method of cleaning and filling and labeling the bottles as he had always done in days gone by. One important thing that he failed to consider was that the use of corks in whiskey bottles was a thing of the past. The patented caps and the standard modern screw caps take the place of straight corks and shell corks that we used to know in the old days. The distiller who had thought that he would produce 300 to 500 cases a day, found that it was advisable to consider a much larger production unit, or units, and it is not unusual now for a distilling plant to consider a production of 10,000 to 20,000 cases per day.

All of this means that even in this modern day, we are presented with new problems to solve, in an effort to use those machines that have proved themselves to be standard and practical in the past few years and make them adaptable to these new containers or operating conditions. A few years ago it was reasonable to assume that in the filling of liquids into bottles it was entirely practical to consider that there were three methods of accomplishing this result; namely, the syphon method of filling, the pressure method of filling, and the vacuum method of filling.

We believe that the syphon method of filling is strictly a thing of the past and we do not think that anything is gained by discussing this method in the present day and age of high-speed production require-

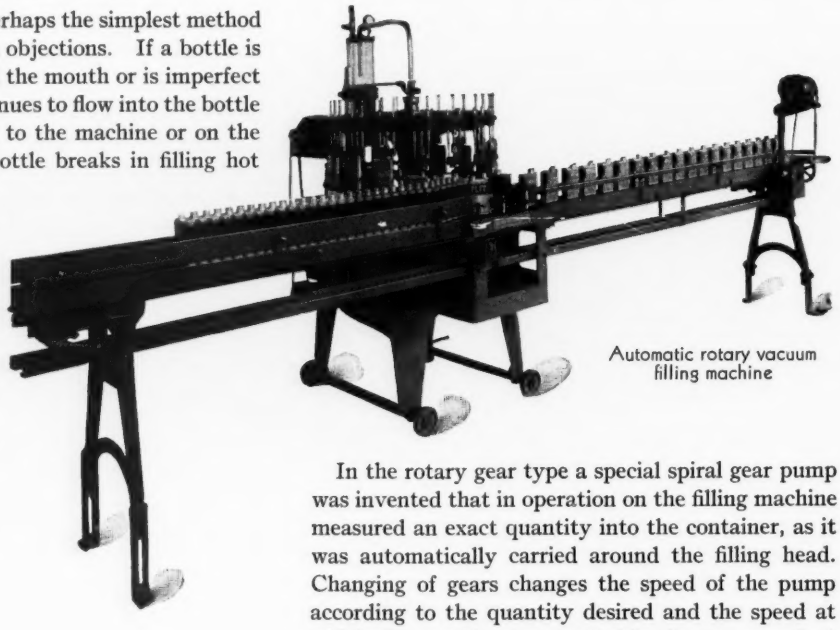
ments. The pressure method, and particularly the vacuum method, we believe, can and should be discussed and we will endeavor to briefly cover various points in relation to these types of machines.

DIRECT PRESSURE METHOD

The direct pressure is perhaps the simplest method of filling but it has certain objections. If a bottle is chipped or cracked around the mouth or is imperfect in any way the liquid continues to flow into the bottle and through the bottle on to the machine or on the floor. If a piece of the bottle breaks in filling hot products, as sometimes occurs, the liquid flows through that aperture until the filling head is raised.

There were also developed some automatic rotary machines of the direct pressure type that were highly efficient and quite wonderful when considered from a viewpoint of the day. Some of these machines are still in operation.

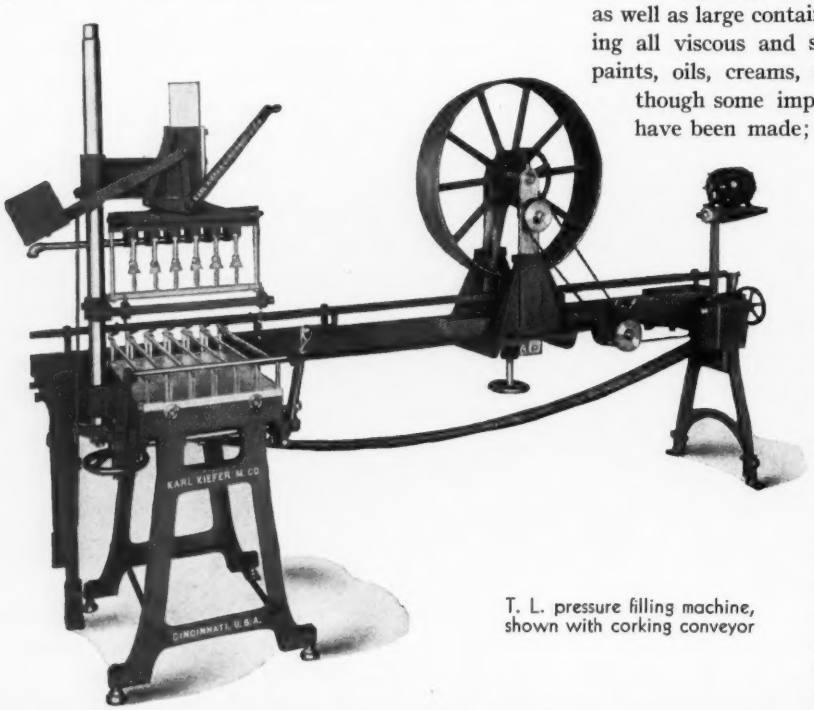
Along about 1914, with the increase in the merchandising of small packages, there arose a necessity for a filling machine to fill not only bottles but also glass jars and tin cans of various types. There were products of a viscous nature that could not be handled by a syphon method or even by the direct pressure method. As the demand increased for a machine to handle viscous products such as jams, jellies, preserves, mustard, syrups, ointments, paints, varnishes, etc., there were developed measuring types of machines and these were of two general types and known as the rotary gear type and the piston type.



Automatic rotary vacuum filling machine

In the rotary gear type a special spiral gear pump was invented that in operation on the filling machine measured an exact quantity into the container, as it was automatically carried around the filling head. Changing of gears changes the speed of the pump according to the quantity desired and the speed at which the machine is operated in the average plant under ordinary conditions.

The machine is also equipped with a friction drive for the finer accuracies desired for measuring an exact quantity into a container, and has been developed to a point where it measures to the fraction of an ounce, giving the accuracy desired in filling small as well as large containers. It is today used for filling all viscous and semi-viscous products such as paints, oils, creams, ointments, mustard, etc., although some improvements and developments have been made; and where originally a speed of 40 a minute was considered ample, new machines now operate at a speed of from 90 to 140 containers per minute.



T. L. pressure filling machine, shown with corking conveyor

There are two styles of piston type machines. In the first the product flows direct from supply tank to the cylinders of the machine and in the other the product flows into a hopper located directly above the cylinders. In both types the piston is set to deliver a predetermined quantity at each stroke. As the piston is drawn back in the cylinder, the liquid follows or is sucked into the cylinder and then

on the reverse stroke is forced out of the cylinder through filling nozzles into the container. These machines are made in various sizes with production possibilities of from 25 to 100 containers per minute.

While the increase in the distribution of liquid products in bottles was considerable from 1910 to 1918, the tremendous development really began about 1918, and with the exception of the slight slump in 1921 and part of 1922, has continued to grow to a surprising degree. Where a factory had a production of one hundred gross of bottles a day in 1918, which was considered something out of the ordinary, today hundreds of factories do as much and

18-Stem hand rotary filling machine

a great number of factories each produce several hundred gross per operating day.

Naturally with this tremendous increase in bottled goods of all sorts there developed an increase in sizes and types of bottles. Peculiarly shaped bottles, very small bottles were, and to some extent still are, difficult to manufacture with a guarantee to perfection. Attempting to fill such bottles at a high rate of speed and a percentage imperfect meant tremendous loss in production as well as in the product itself and the extra labor entailed.

The old type of pressure machine would not do and thus there came into existence the vacuum type of filling machine. Originally this was a simple device, which consisted of a hand arrangement that filled one, possibly two, bottles at a time.

It was at once obvious that in the filling of small bottles such as those for perfumes, extracts and similar products where the percentage of bottle imperfection was very large, the vacuum method of filling eliminated entirely the loss of liquid because it would not fill an imperfect bottle. Machinery manufacturers were not slow to see these advantages and various types of machines have been developed.

Today there is still the simple single stem and double stem hand vacuum filler, the small semi-automatic straight line machines, the tray type machines, the large automatic rotary type machines and the automatic straight line machines.

In the direct pressure machine the supply tank was above the filling machine and the product flowed by gravity from this tank through the head and thence through the stems of the machines into the bottles. As the liquid flowed in, it forced the air out ahead of the liquid.

In the vacuum machine the product comes from the manufacturer's supply tank into a small supply tank on the filling machine, located below the filling head or stems. The vacuum produced in the bottle first draws the air out and thus the vacuum established in the bottle draws the liquid from the small supply tank.

OPERATION OF VACUUM MACHINE

The vacuum machine is extremely simple in its method of operation. The stems are connected by such methods as the various manufacturers of these machines may employ to the small supply tank on the machine. The stem is really a multiple stem, having two openings. Located on the stem is a rubber seal which may be adjustable, and the lower end of the stem enters the bottle to the height at which it is to be filled. At that point the mouth of the bottle is resting firmly against the rubber seal on the stem. Immediately the mouth of the bottle comes in firm contact with the rubber seal, the vacuum, which is produced by either individual vacuum pumps or a general vacuum system in the plant, draws the air out of the bottles through the smaller of the two openings in the stems. When that occurs the liquid naturally follows through the other opening or filling line, fills the bottle up to the air outlet and if the bottle remains in contact with the seal the excess liquid overflows through the air or vacuum line into a vacuum bowl and by means of an ingenious device is automatically returned to the supply tank on the machine. If all connections are tight, if both the air line and the filling line are clean and free, then all perfect bottles will be filled.

The methods of handling the bottles to and from the machines are varied. On some straight line machines the bottles are brought in under the filling stems, the head of the machines is lowered, stems entering the bottles, and the rubber seals on the stems are firmly compressed against the mouths of the bottles. In some other types of machines the bottles are raised, the filling head remaining stationary.

XUM

In automatic rotary type machines, bottles are fed automatically from a conveyor into the filling machine. Each bottle is handled on a separate lifting tray, and after being filled is automatically discharged from the machine onto a conveyor.

STRAIGHT LINE MACHINES

On straight line automatic machines the bottles are carried forward on a conveyor and automatically transferred from the conveyor to a platform which raises the bottles up to the filling head. After being filled the bottles are again automatically placed back on the conveyor. Only partial vacuum is necessary to fill the bottles. In handling heavy products at high speed, vacuum up to 18 in. to 20 in. may be used, but the average liquid filled in the average bottle requires only from 3 in. to 7 in. of vacuum. To give a more specific illustration, on some of the larger automatic rotary machines filling a product such as catsup at 100 pint bottles per minute requires not more than 8 in. of vacuum.

The advantages of the vacuum method of filling are so varied and so great that this type of machine has almost entirely superseded the older types such as syphon and pressure machines.

The accurate measure type, in which the liquid is first measured in measuring cups and then dispensed into the container, is especially well adapted to the filling of products that are of an expensive nature such as essential oils, etc., where an accuracy of quantity is more desirable than a uniform filling height in all of the containers filled. The cup measuring type can be graduated down to a very close margin, as differentiated from the piston type which cannot be classed as an absolute accurate measure for it will fluctuate slightly.

There is another type of accurate measure filler and that is the electrically operated cut-off type or weighing type which is used to some extent in the oil refineries.

The machinery manufacturers have developed various machines that will suit the requirements of almost every bottler. The machines range from the smallest or hand-operated units, with a capacity of 10 to 20 bottles per minute, up to 30 to 50 a minute with a semi-automatic, and from 75 to 150 with full automatic machines.

WEIGHING, PACKING, FOLDING AND SEALING OF PAPER BAGS

R. E. Williams

AUTOMATIC equipment for the efficient closing of stiff containers, which has been available for many years, made it almost imperative for the large producer of packaged goods to seek some form of stiff container, either can or carton, for volume packaging. Although the cost of these containers was considerably higher than paper bags, the saving in production cost more than equalized the packaging overhead, and in most cases the bag remained the packaging unit for only the small producer.

However, the increased demand for merchandizing economies, and an attractive but less expensive container, drew many a production manager's attention to the multi-color lined paper bag. It was at this time that automatic bag closing machines made their appearance, and thus provided for the first time a machine that would, when operated in conjunction with an automatic net weigher, pack, fold, and seal with a strip of gum tape, bags ranging in weight from $\frac{1}{2}$ lb. to $1\frac{1}{2}$ lb. The steps in packaging are as follows:

The exact weight drops from the automatic net weigher into the bag, which is held in place by one operator, who then places the bag on a traveling belt that passes between two vertical belts into the packer, where the material is firmly packed to assure a solid package, and then delivers the bag into the folding and sealing unit proper. Here the bag is tucked, a triple fold applied to the top of the bag and, as this fold is pressed firmly in place, paper tape is cut, moistened and pressed firmly on the top and down the two sides. The seal obtained is practically air-tight, and is the strongest part of the finished package. The dust-proof seal effected is square at the top, and thus permits easy and convenient packing into shipping containers. Standard bags as produced by bag manufacturing companies can be used, and the uniformity with which the bags are automatically packed, folded and sealed assures a continuous production of packages, pleasing to the eye, highly practical and, at the same time, conveying an air of stability formerly associated only with containers other than bags. With one operator to feed the bags to the weigher and another to place the filled bags in the shipping containers, two operators can easily and continuously turn out up to thirty packages per minute.

Less than $\frac{1}{2}$ hp. is required for operating the entire bag packaging unit. Flexibility of operation is another valuable feature, and permits the closing of bags ranging in weight from 8-oz. up to $2\frac{1}{2}$ lbs. The machine is so constructed that the adjustment from one size bag to another can be made in only a few minutes' time. The space required is approximately 12 ft. in length by 20 in. in width.

METHODS OF COLLAPSIBLE TUBE FILLING

by H. G. Addison

THE constantly increasing use of collapsible tubes is due in no small way to the ease of operation and flexibility, as to changes in size, of the modern tube filling equipment. A complete outfit for filling, closing and clipping collapsible tubes may be purchased for as little as $130 and this will perform these operations at 15 to 20 tubes per minute. The small user of collapsible tubes is thus almost as efficient, right from the start, as the larger user. A complete range of equipment of various sizes is available without the necessity of building any special equipment. For less than a thousand dollars a complete outfit to turn out 35 tubes per minute can be had. As production warrants, this output can be increased to sixty or eighty tubes per minute. A new completely automatic filling, closing and clipping machine operates at speeds up to 140 tubes per minute with one operator and is designed to feed directly into automatic cartoning machines.

Considering the work they perform, modern tube filling, closing and clipping machines are remarkably simple and can be maintained in proper operating condition by careful employees. No unusual mechanical skill is required in making the various adjustments for different sizes of tubes, and if those considering the use of this equipment for the first time will put their problem up to a reputable maker of this class of machinery, they can rest assured that the machines will perform to their satisfaction.

The selection of tube filling equipment depends on three important factors: first, the consistency of the material at the time of filling; secondly, the range of sizes of tubes; third, the daily production which is to be anticipated by the plant.

If possible, materials such as cold creams, ointments, etc., should be filled in a warm fluid condition, as much simpler filling units can be employed. At the same time, it is unwise to fill tubes with any material in a warm state, should the material shrink considerably on cooling. This shrinkage will buckle the wall of the tube, giving it a partially empty appearance, which is undesirable to the consumer.

It is also common for a tube user to attempt to overfill a tube in order to give a "fat" appearance and impress the purchaser with the quantity of material he is getting. This over-filling of tubes is efficiency's greatest enemy as it is necessary to stop frequently and wipe off the jaws of the closing devices. In addition to this, these tubes are more liable to leak after being on the dealers' shelves under unusual climatic conditions. A properly filled tube has sufficient flat on the closed end to allow material to expand without seepage through the closed and clipped ends. An "over-filled" tube will usually have a layer of the material inside the fold of the tube, and if the material is even mildly corrosive, such as a shaving cream, the tube decoration and the clip, if used, will soon be spoiled in appearance. A recent development which permits tubes to be sealed hermetically eliminates this trouble entirely. The hermetic type of closure requires a

Battery of collapsible tube filling machines. Courtesy of Arthur Colton Company

tube precoated with a special compound by the tube manufacturer. When the tube is closed, the strength of the closure and its resistance to seepage are equal to those of the wall of the tube itself. No clip is used and less tube length is required than for other types of clipless closures.

Two methods of sealing the tubes after filling can be used. These are the use of a double fold, as in the past, or the use of "clipless closures," of which there are several types available. These closures permit the saving of cost of clips, maintenance and, with semi-automatic machines, an extra operator.

The closing of tubes using clips is done as follows: The end of the tube is flattened, a portion of it turned over, and pressed flat. This operation is then repeated, all automatically, of course. For material such as lighter fluid, rubber cement, rubber solvents, etc., containing highly volatile material, it is sometimes advisable to make the first portion turned over wider than usual, with the second fold the regular width. This gives eight thicknesses of material rather than the six thicknesses obtained with the regular fold, and in reality makes the seal fifty per cent more secure.

After the closing operation, the clipping is performed. This guards the end of the tube and prevents accidental opening of the folded end. Tube clips are cheap and are applied automatically by most users. At the time the clip is applied, a control number may be stamped on one side of the clip.

One of the clipless closure types referred to above consists of making the two usual double folds and then turning the corners back obliquely. Another type is accomplished by making the two usual double folds with the second fold wider than is customary and then folding this double fold in a reversed direction after which the corrugations are applied to give added strength and security to the tube contents or by making an integral clip from the tube metal itself to accomplish the same results.

A decorative band to match the tube decoration can be used on the end of the tube to enhance its appearance. Control numbers or dating codes can be stamped on the tubes using the clipless closure. Ejection of the tubes from the machine after the three operations of filling, closing and clipping are performed, can be automatic or manual as desired.

A recent development in collapsible tube filling is the application of the electric-eye as utilized to obtain proper registration, during the filling and closing operations, of trade mark or other decoration on the face of the tube. Formerly done by operators, it is now possible to obtain such placement automatically and at higher speeds.

STANDARD TYPES OF LABELING MACHINES

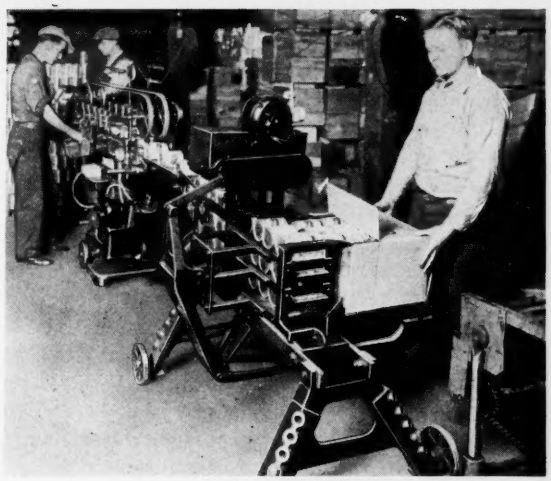
LABELING MACHINES have been developed along with the filling, screw-capping, cartoning and wrapping machine to such an extent that they are of equal importance to the manufacturers for many reasons. Nor is their sphere limited only to the food, drug, chemical, toilet preparation and bottling industries, but they find their way into the cigarette and cigar factory, hardware, hosiery and almost every line where labels are used. Mop and broom handles are now labeled by machines, also insecticide sprayers and wet-stones.

Some of the advantages of the modern labeling machine are the following: It produces a large output, occupies a comparatively small floor space, labels neatly, accurately and uniformly.

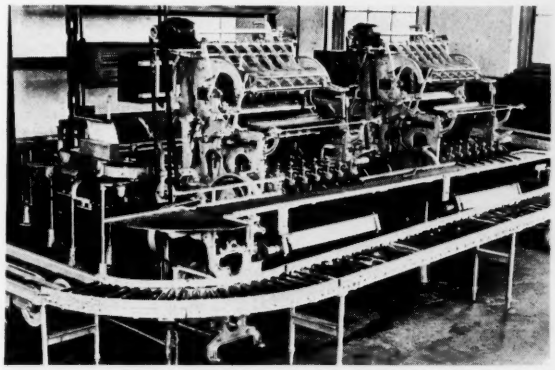
Labeling machines may be classified, first, as semi-automatic and automatic and the latter as rotary, straightaway and can labelers.

The semi-automatic labelers were designed primarily for the labeling of beer and similar bottles, but their use today covers almost the entire labeling field. They are in greater demand today than ever because even the small manufacturer believes in machinery for its economy and superior quality of the work performed. The semi-automatic labeler, however, requires an operator to feed each package or container to be labeled. The article is placed into the machines by hand, the label or labels are applied and then the article removed from the machine by the operator. The speed of these machines being limited to 25 to 30 articles per minute or less, depending upon the character of the article and the energy of the operator, led to the development of the fully automatic labeling machine. Nevertheless, the semi-automatic labeler will always be popular and profitable for small production and where short runs of many different sizes and shapes of packages must be labeled.

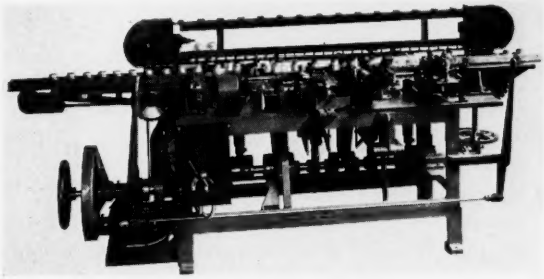
The automatic rotary labeling machine, which is an outgrowth of the semi-automatic, gums the label and applies it in a similar manner, but it has incorporated conveyors for feeding the articles through the machine without handling them by the operator and therefore is much faster than the semi-automatic labeler, attaining a speed of 85 to 90 per minute. A recent important improvement in this type of labeler is the attachment for applying tinfoil around the neck of ginger ale and like bottles. They are furnished by several concerns and are particularly adapted to the labeling of round bottles and jars used in the bottling and food industries as well as some chemical and drug products. They apply on bottles, the body label only, the body and neck label or the body and neck labels and the tinfoil.



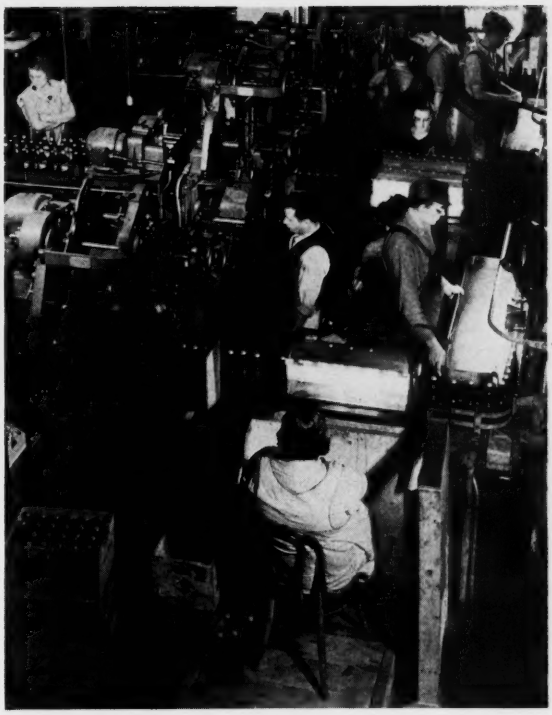
Standard type can labeler (rear) with automatic casing unit in foreground. Courtesy, Burt Machine Company



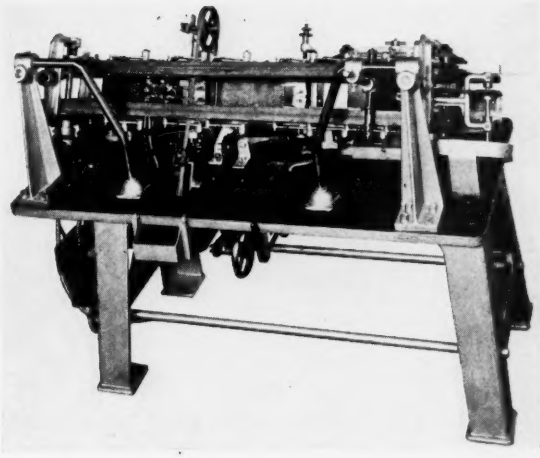
Six wide automatic multiple labeling units installed in brewing plant. Courtesy of Edward Ermold Company



Straightaway duplex labeling unit for products packed in bottles and jars. Courtesy of Pneumatic Scale Coropration



Full automatic rotary labeling units (at left) as used in a large brewing plant. Courtesy of Economic Machinery Company



Unit for applying labels to cartons and cans while placed in oblique position. Courtesy of Burt Machine Company

The straightaway type of automatic labeling machines, which are of more recent design than those above mentioned, go further into the general field of labeling because they can be adapted to sealing or labeling cartons, boxes, wrapped cakes of soap as well as the food, drug and bottlers' products. They have many advantages in the way of speed, accurate registration, cleanliness, adjustability and accessibility. They are built in two standard types known as single and double labelers, both of which types are also furnished in the duplex models.

The single labeler applies one label on one side of the package or container and the double labeler two labels on opposite sides simultaneously.

The single duplex labeler applies one label on each of two packages or containers at the same time and the double duplex four labels on both sides of two articles simultaneously. In other words, if these machines are running sixty revolutions per minute, the single will apply 60, the double 120, the single duplex 120 and the double duplex 240 labels per minute although the machine is running comparatively slowly.

The duplex labeler is a recent development born of the insatiable American demand for speed and production. In order to keep pace with the filling, capping, cartoning and wrapping machines, all of which are often hooked up with an automatic labeler in a straight-line production unit, it was necessary to get greater output from the labeler without applying the glued label in less time. It requires time to apply glue to the label and more time to make the label adhere properly to the container, therefore the slow running duplex labeler can do a better job than the single machine speeded up which seemingly throws the label at the package without sufficient time to apply it properly.

No less important is the perfection of another automatic labeling machine for round bottles where the name of the product appears in raised lettering on the bottle. In such instances it is an absolute necessity to "spot" the label in a determined position in order that every package will be labeled and look alike with respect to the lettering in the glass. Previously this was done by hand or on semi-automatic machines where the best was a good guess at the proper spot for the label. Some manufacturers have discarded their trade mark on the bottle because of the inconvenience in placing the label accurately and automatically. Examples of this spot labeling are to be found in the "Vaseline" and "Listerine" bottles. Such bottles can now be adapted where the name of the product is in the glass to tell what it is after the label is destroyed, and they can be properly labeled by fully automatic machines.

Regarding the quality of the labeling done by hand and by machine, manufacturers may say that no machine can do this work well enough. However, such objections can be answered by referring to the labeling of cigar boxes which are perhaps some of the best labeled packages in our show cases. The labels are beautiful, of many colors, embossed and cut neatly and accurately. Until recently they were applied by hand, which almost ruined their good appearance and lustre. Because paste was used instead of glue it soaked the label and destroyed the colors. Then it was placed by hand and wiped on with a rag which killed the embossing and smeared the colors. Today the automatic machine applies thin glue quickly, applies the label at once and places it even more accurately than the hand. The result is that the moisture in the glue does not have time to penetrate the label, therefore the embossing and colors remain just as the printer made them.

Incidentally, it might be said here that 95 per cent of a cigar box can be made on automatic machines which insure their uniform shape and size just as the machine-made bottle is uniform, which requisite is most important for machine handling. Unless uniformity in size and shape is obtained, efficient labeling is impossible.

Can labeler. Where full length labels which overlap are applied to round containers, the universally known automatic round package labeler is in general use, one type of machine being for hermetically sealed, friction lid and screw top containers, while another is for slip cover containers. One or the other types of machine are employed in the food packing and kindred industries, including paints and specialties and the other in most of the coffee plants as well as several salt factories. Cans with ears such as large packages of paint are also automatically labeled through utilizing a full length label which overlaps and is died out to encircle the ears, thus supplanting the front and back label formerly used. Glass containers have also come within the scope of the automatic round container labeler, nationally known products like Sal Hepatica being labeled on this type of machine as well as glass containers of insecticides, toilet preparations, fruit juices, etc.

This type of machine can operate at a speed of from 150 to 250 or more packages per minute because of the fact that the packages are rolled through and a comparatively simple and speedy form of mechanism can thus be utilized, hence the automatic round package type of labeler is the speediest mechanical medium available and fulfills all the necessary requirements.

Modern factory practice has demonstrated the importance of machine production and that manufacturer is wise who leaves no stone unturned to place all of his manufacturing on a machine basis. The use of machinery in the finishing or packing department is as important as in the actual processes of manufacture, and the manufacturer who extends his machine methods to these departments is bound to profit more than the one who does not take advantage of the equipment offered.

In general, a labeling machine can be equipped with attachments to handle a manufacturer's package without alteration but occasionally a minor change in container or label will simplify the work and enable the labeling to be done with a minimum of care. Where new packages or labels are designed it is well for the manufacturer to bear in mind a few simple facts that will enable him to favor the labeling machine and to operate under the most ideal conditions. The best labels are made from thin paper, soft and comparatively light in weight so that they will conform easily to the shape of the container. The surface of the container should be such that the label will naturally follow the contour without wrinkling. A spherical surface is impossible, for the label must curve in two directions and will not lie smooth. Where hexagonal, octagonal or similar containers are used the size of the label should be such that the edges of the label should extend well over the corners of the container and on the flat sides to prevent the edges of the label from becoming loose after the label had been wiped on and the container removed from the machine. The observance of these rules will make for efficient practice in the labeling of packages.

AUTOMATIC PRINTING MACHINERY

by A. A. Morse

THE development and improvement of automatic printing machinery make it possible for the manufacturer to operate his own printing plant under conditions which effect savings on his requirements for printed wraps, labels, cartons, tags, etc.

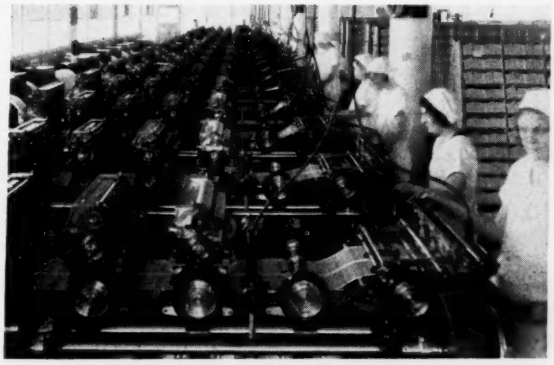
The design of automatic printing machines conforms with the principle of continuous straight line production, so necessary for manufacturing economy today. Paper travels through the machine in as straight a line as possible, during which it receives successively the various colors making up the completed printed design. After being printed it goes through various supplementary operations such as cutting, scoring, folding, perforating, numbering, etc.

Automatic printing machinery falls in two classifications:

(a) Machines in which the paper travels forward in a single continuous roll, such as the Chambon automatic printing machine and the New Era press.

(b) Machines in which the paper is fed through in sheet form on multi-color presses such as the Claybourn press.

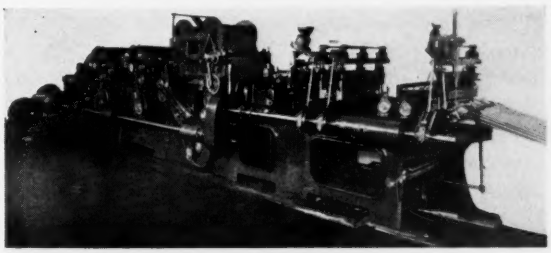
Chambon Printing Machine. With this type of machine, paper is furnished in rolls and travels through the press in a straight line. Printing operations are successively performed by cylindrical, chrome-plated bronze or steel plates good for as many as 100,000,000 impressions. All mechanical motions are rotary to avoid vibration and noise. Specially designed ink fountains supply the ink. Any number of colors may be used. Both sides of the paper can be printed at the same time.



Chambon multi-color presses at Beech-Nut Packing Co. plant

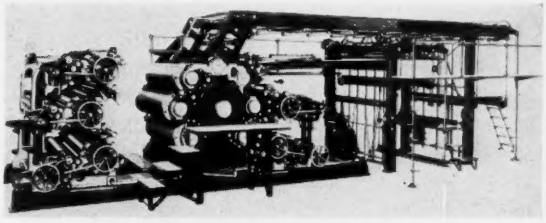
These machines can be adapted for letterpress printing, dry offset, or rotogravure. Combinations of these can be effected. The same machine can be used for scoring, creasing, embossing, perforating, slitting and rewinding, sheeting, dieing out to shape and other supplementary operations.

New Era Press. In this press the paper also travels forward from the roll through the press, but with an intermittent motion. As the paper comes to rest from time to time under each of the printing units, it receives successively the different colors from these units while it is at rest. After being printed it passes through the various special units such as the perforating, cutting and scoring, punching, numbering, tag-making, metal eyeletting, etc. Each of these different units operates while the paper is at rest. After these various operations are performed, the web continues to travel through the slitting unit where it can be slit into strips if desired and then to the cut-off or rewind, where it is either rewound into rolls or cut off into sheets.



New Era printing press

Claybourn Press. A multi-color sheet-fed rotary press manufactured in from one to five colors, and in two sizes. These presses can be started quickly and operated at high speeds. Perfected printing plates result in twice as many impressions per plate. While this type of press requires more floor space than the two types mentioned above, it effects considerable economies due to the high speeds at which it can be operated and the large size of the sheet which it will take. The manufacturers of this press also make a five-color high-speed web label press which takes the paper in rolls, prints it, and delivers it in sheet form.



Claybourn multi-color rotary press

CORRUGATED AND SOLID FIBRE CONTAINERS

by J. D. Malcolmson

A FIBRE shipping container is a tough, efficient and economical outer package built to withstand the wear and tear of freight, express and parcel post shipment. It is used for shipping all manner of commodities up to a weight limit of ninety pounds. There are two types of these boxes, both equally popular—the laminated walled "solid fibre" box and the cellular "double faced corrugated" box.

The fibre container is an evolution, partly of the ordinary paper carton, and partly of the familiar corrugated straw sheet, used, among other things, as a wrapper for bottles and incandescent lamps. Corrugated paper itself has been in use for some fifty years as an interior packing and wrapping material. More recently, one face and then two were glued to this corrugated sheet to make a rigid board; but it was not until 1903 that experimental freight shipments were made in boxes built from this combined material. In 1906 the general use of fibre containers for freight shipments was authorized by the railroads, and this marked the real start of the industry.

Economically considered, the fibre box is an important factor in forest conservation, inasmuch as only about one-sixth of its raw material is new wood pulp, the balance being largely reworked waste paper. This waste paper, moreover, usually contains a fair proportion of old fibre boxes which have outlived their period of usefulness and have found their way back to the paper mill. These savings are in addition to the billions of feet of lumber for wooden boxes that are replaced.

The average fibre box weighs only from two to three pounds, which means a reduction of shipping weight anywhere from 10 to 50 per cent when compared with the same size wooden boxes. It is shipped flat when empty, and in this form occupies about one-tenth of the space it will contain when set up.

The fibre container affords a satisfactory means for shipping fragile articles, as well as heavy commodities of relatively small size. Liquids in glass, for instance, are moved in these boxes with a minimum of breakage. The bottles are usually packed in cells formed by partitions of corrugated fibreboard. Another method of packing which is in greater demand is the "unit carton" system. Articles such as electric irons, lamp fixtures, etc., are placed in an individual carton, which also contains the necessary accessories. A certain number of these cartons, say, two dozen, are then shipped in a container, so designed that the contents exactly fill the box. The advantages of this system are that breakage is practically eliminated, the goods are received by the retailer in an attractive condition for displaying on his shelves, and the customer receives the article with its accessory fittings in a convenient and expeditious manner. Many of the larger box makers maintain elaborate designing departments, which are devoted to the devising of new and better methods of packing.

The advantages which are claimed for the use of fibre containers are as follows:

First Cost—Being largely made from waste products in large quantities, their first cost is relatively low as compared with other types.

Weight—Tare weights are relatively low, resulting in freight savings on shipments as well as on incoming supplies of boxes.

Convenience—The absence of nails and splinters prevents injury to hands or clothing in packing and invites freight handlers to lay aside their hooks. Its relatively small size, which is controlled by railroad requirements, makes for easy handling in shipment and storage. It is often used as a shelf package and as a unit package for delivery to the ultimate consumer without opening and re-packing.

Storage—Fibre containers are delivered flat and are stored in a minimum of space. Approximately ten of these flat cases can be stored in the space occupied by one of them when set up.

Concealed Theft is minimized, as the case, when properly sealed, must be practically destroyed to open it.

Sealing is very economical, due to the development of automatic sealing machines described elsewhere.

Advertising—Being a paper product, these cases are susceptible to high grade printing in one or more colors and form a traveling billboard as long as they are in existence.

Sanitary Features—These cases are used new and seldom re-used. Paper linings are not necessary and dust and dirt find no access.

Accuracy—Shrinkage, warping and swelling are unknown.

Conservation—Timberlands are conserved as only a small proportion of the box consists of new wood pulp. The balance of the material includes discarded boxes re-worked into new paper.

Stacking—These boxes, due to the combination of light weight and rigid walls, can be stacked to the roof of most warehouses.

NOMENCLATURE

Much time and correspondence are wasted through different ideas of terminology. This is in part due to the rapid growth of this industry which has not had time to evolve a standardized vocabulary.

The following list is by no means complete but it does contain most of the terms which are subject to misinterpretation:

Fibre Containers—The general term which includes both corrugated and solid fibre cases. The words "fibre" or "fibre boxes" are often used to designate solid fibre containers, but this is open to misconstruction.

Corrugated Fibre Containers, or usually simply "corrugated cases," generally indicates boxes made of single strength, double faced corrugated board.

Corrugated Board is a general term and may mean any of the grades named below.

Unlined Corrugated is the corrugated paper alone with no "liners" or "facings." It is usually made of 0.009 in. straw but sometimes is 0.009 in. chip and unless otherwise specified, is the usual or large corrugation, $^3/_{16}$ in. in height. It is used as wrapping material for lamp chimneys, etc., and has the disadvantage of stretching and thus losing the cushion value of the corrugations. It usually comes in rolls.

Single Faced Board has one liner which may be of straw, chip or jute and usually either 0.009 in., 0.012 in. or 0.016 in. thick. It is used for inner packing and wrapping and is usually sold in rolls 36 in. wide, 250 ft. long, weighing from 60 to 75 lbs.

Double Faced Board, or double lined corrugated, is made with two liners of straw, chip, jute or kraft and is described by the railroads as "single strength." It may be test or non-test board and cannot be rolled.

Double Strength Board is often spoken of as "double double" and "double walled," but the term "double strength" is preferable, as this is the designation used by the railroads. It is a combination of double face and single face, having three liners and two corrugations and is from $^3/_8$ in. to $^1/_4$ in. thick.

Straw Paper or "Strawboard," used for the corrugations, is 100 per cent wheat straw, although rye, oat and rice straws are occasionally used. Strawboard is sometimes imported from Europe, usually from Holland. It is generally made 0.009 in. thick for corrugating, although 0.012 in. or heavier is sometimes used for this purpose. Chestnut waste, sulfate, sulfite and pine wood fibreboard is also permitted by the railroads for corrugations, but the production of these materials is relatively small.

Chip, or Chip Board, is made from mixed waste papers and is usually 0.009 in., 0.012 in. or 0.016 in. thick. Corrugated board with chip liners is usually used for interior packing.

News, or News Board, is made of newspapers and is sometimes used in place of chip, though more expensive. The other grades of boxboard do not enter, to any great extent, in the making of shipping containers.

Liners are the facings of single face, double face or double strength corrugated board. They may be 0.009 in., 0.012 in. or 0.016 in. chip or 0.016 in., 0.018 in., 0.023 in. or 0.030 in. jute or kraft. Solid fibre liners are usually 0.016 in. jute or kraft. "Liner" is also used to describe the interior packing sheet which lines the four sides of a case and which is usually made of double faced chip or straw corrugated board. This liner is usually made in one piece with three vertical creases but unjoined.

Jute is really a misnomer, as jute is no longer used in this industry. A "jute" liner is a mixture of new kraft or sulphate fibres and high grade mixed papers.

Filled Kraft Liners—These are kraft liners with a small proportion of waste paper or groundwood added.

All-Kraft Liners—These contain no mixed papers but are usually made entirely of sulphate. They are among the new developments that are to be found in the industry.

Solid Fibre is a laminated board built by gluing several piles of board together with silicate of soda and is often referred to as "fibre" or "fibreboard." (See *Fibre Containers*.) The two outer plies are made of jute or kraft. Solid fibre is usually made in 0.060 in., 0.080 in. and 0.100 in. thicknesses as called for in the Classification, but some 0.090 in. and 0.120 in. board is occasionally used for shipping containers.

Single-Lined Solid Fibre—This is not often used for shipping containers but is applicable where only a single bender is required and permitted.

Test and Non-Test Board—In this industry this usually applies to board that does or does not comply with the railroad requirements regarding bursting strength.

Express Stock—The correct name of this corrugated board is *jute and chip* which describes its construction. At one time this was acceptable for express shipments. The express rules are now essentially the same as the freight rules except that for most items of less than 35 lbs., jute and chip may still be used.

Mullen or Cady Test—These two instruments register the bursting strength of a board, presumably in terms of pounds per square inch. Actually the results are not exactly in these proportions and for this reason many people refer to the figures as Mullen "points" or "units." Both of these instruments are official as shown in Rule 41.

Webb Tester—This instrument overcomes many of the objections to the Mullen and Cady test by testing the liners of double face corrugated board separately, but it is not recognized as official by the railroads.

Rule 41 is that part of the Official Classification which itemizes the specifications for corrugated and fibre shipping containers when used for freight shipments. *Rule* 18—This does the same for express shipments and is a part of the Official Express Classification.

The Bureau of Explosives, 30 Vesey Street, New York City, issues a handbook containing additional express and freight container specifications for dangerous articles.

Food Administration Specifications—These are the same as the so-called *National Canners Association Specification* and specify higher test corrugated and

solid fibre cases for canned goods than are required by the railroads. They are therefore regarded as being unofficial.

Certificate of Box Maker—This is sometimes known as the "Imprint."

The following list is not complete but covers the most important styles of boxes:

Regular Slotted Carton (RSC)—Most containers, especially for freight shipments, are made in this style because of the economy of using a straight cut blank. All flaps are the same length and the inner flaps do not meet unless the length and width are the same.

Special Slotted Carton—All Flaps Meet—Also called "Center Special Slotted Carton." This is more expensive as inner and outer flaps are of different lengths, necessitating an extra manufacturing operation with a loss of stock.

Full Overlap Slotted Carton—Also known as "Full Flap S. C." The length of the outer flaps is the same as the width of the box. The inner flaps may meet, gap or overlap. This style is usually desirable on a long narrow box and gives added strength to any shaped container.

One-Piece Folder—This has flaps at top only and is used to pack flat material such as advertising cut-outs for shipment by parcel post or express.

Cracker Caddy—This is a special container. Usually about 10 in. x 10 in. x 11 in., made of a moisture- and greaseproof board combination. It is occasionally referred to as "can" or a "qu."

Silicate of Soda—This is an adhesive sometimes used for sealing containers and also used in the manufacture of corrugated and solid fibre board. Another name is *water glass* and it is generally referred to as simply "silicate."

Point—In this industry a "point" is one thousandth of an inch; 0.060 in. board is spoken of as "sixty point" board.

Height—Depth—These synonymous words indicate the distance between the openings of a box, i.e., from top to bottom. "Height" is preferable as in some industries "depth" means from front to rear. The height of a slotted carton is always the last dimension.

Girth is used in the parcel post specifications and means the distance around the parcel at its thickest part.

Length in these P. O. specifications is the greatest distance in a straight line between two ends.

Nests, or Partitions, are slotted half way so that they interlock. A *Divider* is simply a vertical pad with no slots.

Star Cut Pad—This corrugated pad has radiating die cuts and is used to separate large glass objects, such as bowls and illuminating glassware. It is also known by such descriptive and imaginative terms as "rat trap pad" and "pie cut pad."

Die Cut Work is made on a special press and the initial cost of the die and extra make-ready must be allowed for. The ordinary fibre box equipment works in straight lines, at right angles, so that other unusual work must be made on a separate cutting and creasing press.

Crease and Score are used interchangeably but "Crease" is preferable as "Score" may mean a knife cut, as it does in the set-up box industry. Such a cut score is not used in the fibre container industry.

Joint and Seam—The railroads define "joint" as the result of the operation done by the box maker in taping or stitching the fourth corner of the box; and "seam" as the juncture that is closed by tape in the sealing process.

Bales and Bundles—This refers to Section 4 (*c*) of Rule 5 and means that items accepted under this category may be shipped in corrugated or solid fibre containers *without* restrictions as to weight or dimensions.

Printing Plates—Solid fibre is printed from brass plates or electrotypes. Corrugated board is printed from rubber plates which are cast from type or from a wood cut.

"A" Flute Corrugation is approximately $^{3}/_{16}$ in. high, 36 to the foot; *"B" Flute Corrugation* is approximately $^{1}/_{8}$ in. high, 50 to the foot.

PATENTED TYPES OF FIBRE CONTAINERS

Almost an endless number of unusual boxes have been patented, advertised and finally forgotten. Most of these are either impracticable or too expensive for the purpose intended. Those in the limelight at the present time are:

The Reinforced Score Box—A corrugated container with a strip of tape glued over the score-line, either on the inner liner or inside the board. Three different companies have patents on variations of this idea.

The Reinforced Tape Joint, in which the ends of the tape on the manufacturer's joint is split and tucked under at each end.

Burlap-Covered Box—This is a corrugated box with an outer covering of burlap cemented on with asphalt. This box, because of its strength and moistureproof qualities, is suitable for export use.

Recessed End Box—The ends of this solid fibre box, being recessed, are strengthened by the resulting stitched rim.

Bliss Box—This type of fibre container, designed by the H. R. Bliss Company of Niagara Falls, N. Y., consists of a three-piece box made of solid fibre or corrugated board. The blanks are joined by means of flanges stitched in place, which reinforces the corners and all vertical seams. It is claimed that the corners and vital seams are the vital parts of the fibre box and that when reinforced by stitched flanges, the resulting box is much better fitted to withstand the shocks and strain of handling and of transit. The box is also more rigid and can be stacked higher without bulging.

SEALING SHIPPING CONTAINERS

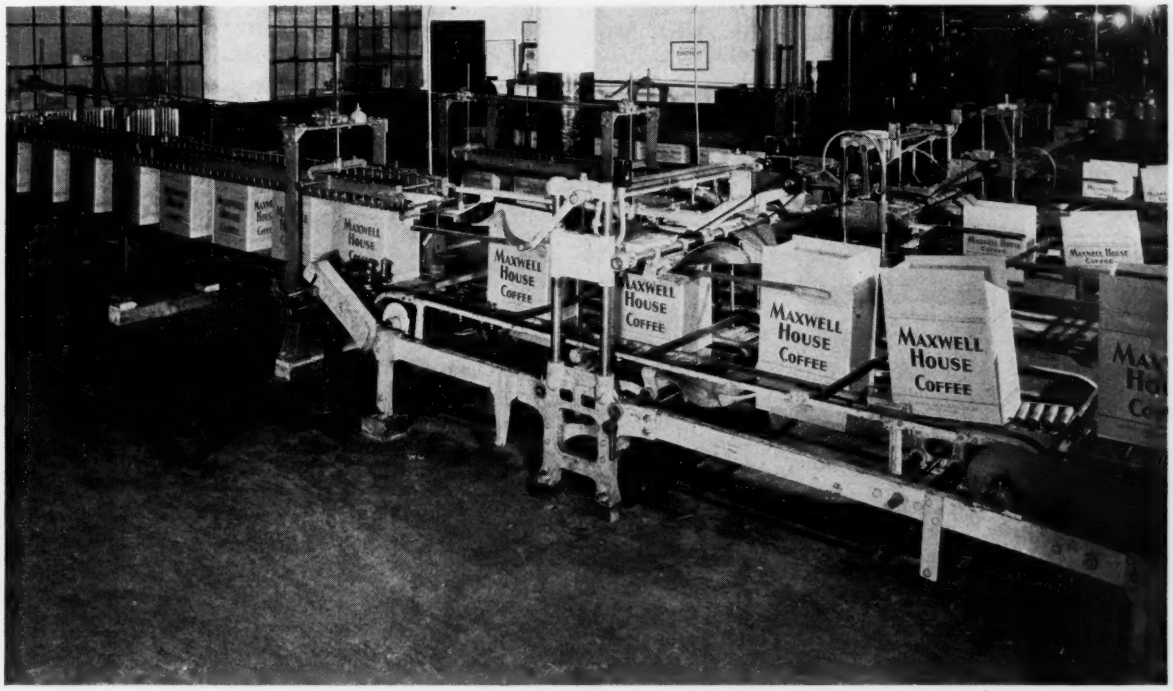
by W. D. Kimball

VAST improvement has been made in the methods and equipment employed in the packing and sealing of solid fibre and corrugated paper shipping cases in the last decade. During that time the methods employed in sealing cases have passed through several distinct phases.

When paper cases first came into general use, it was almost uniformly the practice to make up or glue the bottoms of the containers before the goods to be shipped were packed therein. As a rule this was accomplished by applying adhesive to the inside bottom flaps, folding the outer flaps over and then placing weights on the inside of the case until the bond was formed. In many instances forms were provided over which the case to be made up was placed, adhesive applied to the flaps and pressure brought to bear on the flaps over the forms by means of a lever and toggle-joint. Of course, all this required the services of an operator to make up the bottoms of the cases before they were packed, and still another operator was required to seal the tops of the cases after the goods were packed therein. This last operation as a rule was accomplished by applying adhesive to the inner flaps, folding the outer flaps in place and then piling the cases one on top of the other on trucks or on the floor, the weight of the goods in the cases being the only pressure exerted to effect the bond.

It gradually became apparent that it was unnecessary to make up the bottoms of the cases before packing the contents therein, and to supply the demand for a machine to meet this requirement, the manufacturers of sealing equipment evolved a simple drying or compression unit consisting of a top and bottom roller bed, the rollers in the top bed being fitted with compression springs which caused constant pressure on the case as it passed through the machine.

The operation of this equipment required that the operator fold under the bottom flaps in the position which they would occupy when sealed, and before applying any adhesive the goods were packed in the case, the top flaps were folded over, adhesive applied and the case turned over with its bottom up. Then the operation of gluing was repeated on the other end of the case and the box inserted in the machine. This was a long step forward as compared with the original method of making up the bottoms of the cases, as it required but one person to operate the machine, resulting in a saving of 50 per cent of the labor cost.



Automatic top and bottom sealers, with pressure units, for shipping cases

The next logical step was the automatic gluing device for the application of adhesive to both the

top and bottom flaps of the case with the goods already packed therein. With the advent of the automatic gluing device used in connection with the compression unit, the demand for automatic gluing and sealing units was greatly increased because of the tremendous saving in labor cost, and because through the use of automatic means, cases were sealed in a more uniform and satisfactory way than when the human element entered into the operation.

The manufacturers of automatic equipment have constantly had in mind the thought that it was up to the machine to properly seal all cases, irrespective of the slight irregularities that occur in the manufacture of paper shipping cases. It is only reasonable to expect that such irregularities may exist for there is no assurance as to exactly where the board will break at the score line. The score line itself is, as a rule, $^3/_8$ in. to $^1/_2$ in. wide, and if the hinging of the flap takes place exactly in the center of the score line, then the flaps will come together without the need of the lateral pressure. But if the break occurs near the top edge of the score line, the outside flaps will be short and some rolling pressure on the case is required to bring these flaps together to make close abutting seams. Manufacturers of automatic sealing equipment have furnished appliances on their machines which take care of these varied conditions.

In the past few years there has been a demand for what is known as strip or spot sealing in instances where cases are shipped to destination and then opened for repacking or resorting. To supply this want, manufacturers of sealing equipment have developed machines which lay narrow strips of adhesive over the flaps that are sufficient to seal the case and hold it in rigid rectangular form, but which make it possible to open the case without destroying the flaps so that the box can be resealed and used for the reshipment of goods.

A long felt want was filled when the machine manufacturers supplied automatic sealing equipment with a power-driven adjustment to effect the setting of the machine from one size case to another, as there are many manufacturers who have large runs of cases with many different sizes, and it was necessary to supply a means for making practically instantaneous change from one size to another in order not to curtail production. Such machines have been developed and are used by many manufacturers whose cases vary widely in size.

There has been a constant demand in recent years for an increase of speed in the operation of sealing equipment, due to the speeding up of manufacturing lines, and the automatic sealing machines which are now manufactured in many instances have a capacity of as high as thirty to forty cases per minute, and they attain this speed without serious strain or wear and tear on the equipment involved.

There are practically no reciprocating parts in the modern case sealing equipment, all motions being rotary, and shaft speeds, even in the higher capacity machines, are comparatively slow, all of which make for low maintenance and repair costs.

One of the difficulties which the manufacturers of sealing equipment encountered when the automatic machinery was first evolved, was to find space in the manufacturer's plant of sufficient dimensions to permit of the installation of the machines in question. It is a fact that for a given number of cases there is not as much space required for an automatic sealing unit as would be required to seal the same number of cases by hand, but it has been evident that insufficient thought was given in the planning of certain plants, to provide the proper amount of space to carry on this important operation.

This condition has largely been eliminated as plant engineers and industrial architects have come to consider sealing equipment as absolutely necessary to the successful handling of the product and are giving more thought at this time to the providing of sufficient space at the proper point for the sealing installation.

It would be well for any manufacturer, contemplating the revamping of an old plant, or the building of a new one, to get in touch with the engineers of one or more of the sealing equipment manufacturers and to work with them to the end that equipment of the most economical description could be furnished, as it is often expensive to make installations of automatic machinery as an afterthought when proper planning beforehand would make for a better job.

TYPES AND METHODS OF METAL STRAPPING

by C. S. Henderson

PROBABLY no other material has been such a potent force for economy in packing as has metal strapping. It lends reinforcement to both wood and fibre containers and upon its strength depends the success of baling. Many novel and ingenious applications serve the shipper. The Government not only approves[1] of the use of metal strapping but permits a decided economy in the specifications for a container which is to be properly reinforced with metal strapping. This economy, in the case of wooden boxes, runs from 20 to 35 per

[1] *Federal Standards Stock Catalog*, Sec 4, Part 5 (NN-B-621).

cent. It is to be noted that Freight Classification Rules require its use on bundles and bales, as well as on many specific articles. While the largest part of the metal strapping manufactured is used on domestic shipments, Steamship Freight Classification requires practically everything reinforced.

Broadly speaking, metal strapping consists of two kinds: Nailed and Nailless. The former, as its name implies, is nailed on, whereas the latter is applied tightly about a container and the ends fastened together. Due to its speed and greater efficiency, the nailless system is much preferred. All strapping should be treated to prevent rust and corrosion and the two methods currently employed to accomplish this are painting and galvanizing.

The proper material to use and the most efficient system of application depend not only on the package, its size, weight and material, but also upon many other factors. Notable among these are the conditions surrounding the actual packing and loading, as well as the particular transportation hazards to which the package will be subjected. While there are several methods of application and a variety of equipment available to the shipper, it is recommended that a prospective user consult the manufacturer's packing specialists for advice and suggestions regarding the use of their products.

METAL STRAPPING OF BOXES

Both wood and fibre boxes are stronger and safer when metal strapped. This reinforcement about containers carrying heavy loads takes the explosive force of the shock when the package is dropped or roughly handled. It is customary to apply it about the sides, top and bottom and one or more straps are used. When one is applied it is usually placed about the center of the girth. When two are used one is spaced one-sixth the length of the box from each end. Not the least important service rendered by nailless strapping is its prevention of pilferage and concealed loss. In connection with this it is interesting to note that trade-marked seals quickly identify the shipper's band.

The degree of tension to be used depends on the type of box strapped. For wooden containers, sufficient force is used to make the straps cut into the edges of the box. On solid fibre and corrugated containers the strap should indent the edges but not severely enough to crush them.

The use of metal strapping on solid fibre and corrugated boxes is rapidly expanding. This is true of both the regular slotted carton and the Bliss style, as well as modified designs of both. Strapping is frequently employed to act in the double role of closure and reinforcement. When so employed it assures the arrival at destination without loss from pilferage, yet it permits the package to be quickly opened without damaging the carton. In many fields this has been found of great value, as the carton's contents can be inspected or altered and the same container used for re-shipment. Many commodities are shipped in metal-strapped fibre cases which heretofore went in more expensive types.

UNIT-LOADING

Metal strapping is available in a wide variety of sizes, ranging from strap suitable for small lightweight packages to that of the proper size to tie all the merchandise in a freight car together into one unit. This unit-loading of carload freight shows considerable economy over other methods of bracing and reduces damage to a minimum. In both theory and practice it permits the entire load to shift as a unit and thereby dissipates the force of handling shocks. This rapid method of carload bracing is adaptable for mixed as well as solid uniform loads.

BUNDLING

Whereas in the past almost everything was boxed for shipment, it is customary today for many articles to be strapped together as a unit and shipped without any other packing. This type of bundling saves both the container cost and the freight on its tare weight. While not applicable to all items this idea is spreading rapidly for certain types of commodities. Bundling of several standard packages into one unit is practiced to reduce handling costs, eliminate a multiplicity of labeling and to assure the arrival of the entire shipment as a unit.

SPECIAL USES

In an increasing number of cases it has been found that specific articles do not require complete packing protection. In these cases, a limited protecting element can be strapped to the article in question. Among such cases are batteries, which are frequently shipped with covers strapped over the terminals, as well as nested stove pipe, which are strap-bundled with suitable caps for end protection. On the other hand, economic circumstance has dictated the packaging of many items, such as sash-door and window-frames, etc., which heretofore were shipped as aggregate pieces.

SKID SHIPMENTS

It has been found both economical and expedient to ship many basic commodities, such as tin plate, sheet steel, coiled strip, paper, etc., on skids. In this method the commodity is strapped to the skid, which holds considerable weight, and as a rule these skid units are rapidly handled in loading or storage by either hand or power trucks. Although the unit is too heavy to admit of manual handling, the same truck that moves it about is frequently employed to stack one loaded skid on another and thus conserve storage space. Thus does metal strapping not only help solve the problems of shipping, but it plays a part in materials handling, both for storage and inter-plant movement.

XUM

METHODS OF WIRE STITCHING

by G. Prescot Fuller

ASSEMBLING and sealing containers by means of wire stitching is much used because of the ease of its application and the strength and security of the joint, each stitch giving a positive closure of the flaps. No setting time is required as when adhesives are used, and relatively cheap labor can be employed. Furthermore, if warehousing and repacking are desired, the stitches can be removed with a screwdriver or special tool without appreciable damage to the case, whereas a box with glued joints cannot be opened without serious tearing of the flaps. The method is economical, as inexpensive machinery is needed, and wire stitches cost only from three to five cents per thousand. Wire stitching is of general application, irrespective of the size of the container, the construction of the flaps or the kind of board of which it is made.

All wire stitching machines are variants of the simple box stitcher, which comprises a stitcher head, a body or frame supporting the head and also containing the driving mechanism, a base supporting the body and a horizontal arm for holding the work, the end of the arm containing the clinching device. Stitching heads are of two general types, in one of which the wire is fed from the side while in the other the wire is fed from the top. Both types are constructed with means for feeding the wire and cutting it in predetermined lengths, receiving the piece of wire and transferring it to the bending mechanism, bending the ends of the wire to form legs, and driving the formed stitch through the work, a supporter being provided that supports and guides the stitch while being driven. The arm contains a grooved clincher which receives the legs of the stitch and bends them inward and tightly against the under side of the work.

Stitcher heads with side wire feed are usually employed for stitching containers since they can be more ruggedly constructed, while the vertical feed type is used for multiple head work because the heads can be placed closely together.

The clinching arm is quickly adjustable, up or down, to accommodate varying thicknesses of work and the wire feed is also instantly adjustable. Angle arms can be obtained for handling special classes of work, and adjustable gauges of various sorts can be had for facilitating repetitive operations. Machines are available with the stitcher head set at an angle so that stitches can be driven at 45 deg. to the grain or the corrugations.

Many different sizes and shapes of wire may be used, also the width of the crown can be changed, provided the proper parts are installed. The ends of the wire can be cut square or at an angle of 45 deg. as desired. The wire usually employed is of copperized or galvanized steel, .103 in. wide and .017 in. or .020 in. thick. Another type of wire is 0.60 in. wide, and .020 in. or .024 in. thick. The number of stitches of average length per pound of wire will run from 1600 to 2500, and the cost from three to five cents per thousand. Stitching wire comes on 10-lb. spoolless coils, an aluminum spoolholder being used in setting it up on the machine. The usual crown length is $^3/_8$ in. or $^7/_{16}$ in., although for some purposes longer or shorter crowns are employed.

The following sections describe the more usual applications of wire stitching in the assembling and sealing of containers, also some of the variants of the box stitcher.

REGULAR SLOTTED CONTAINERS

Box stitchers are used for stitching the manufacturer's seams of regular slotted containers. This operation can be performed on a standard box stitcher, the work being pushed along the arm as stitched, and the finished box afterward withdrawn. The box may also be folded over the arm and stitched as it is being withdrawn towards the operator. There is some advantage in making up boxes in this way in that the flange may be more accurately positioned along the adjacent side than when the box is folded on the creases and then stitched. Stitches are placed $2^1/_2$ in. apart, with tie stitches very often used at each end of the seam, although on boxes less than 18 in. in depth the classification permits a maximum spacing of 3 in.

It is better practice to use the so-called "slotted container stitcher" for this operation, this machine being equipped with a table on which the blank rests, and also an open head device (or clincher tongue) bolted to the stitcher head and rigidly or semi-rigidly supported thereby. The open head device is merely a double guiding member and clincher arm which holds the stitching flange and the opposite side panel in proper position during the stitching. The box blank is folded along two opposite creases so that the flange overlaps the adjacent panel, the flange and panel being guided through the open head and then stitched. The finished box is removed from the discharge end of the machine, thus making a continuous operation in one direction.

For stitching corrugated boxes, it is preferable to have the stitches diagonal to the corrugations to give greater holding power, and machines up to 48 in. in throat length are available for this work. The operation is carried on in the same manner as when the straight head machine is used.

Automatic R. S. C. stitchers are often used for this

work where long runs of one size are involved, the machines having one stitcher head set at an angle of 45 deg., and which in some cases is of the duplex head type to permit driving double rows of stitches, or tie stitches at each end of the seam. The machine is equipped with devices which first stitch in proper position, and space the other stitches evenly and in predetermined number, the finished box being ejected by means of high speed rollers at the rear end. The machine is quickly adjustable for different sizes of boxes; and two operators can easily turn out 30 to 35 boxes per minute having five stitches in the seam. Larger boxes naturally require more time.

Multiple head box stitchers are sometimes used for this operation, all of the stitches in the seam being driven at one stroke of the machine, but for ordinary high production work the single head automatic R. S. C. stitcher is employed to a much greater extent than the multiple head type.

THREE PIECE (BLISS) BOXES

One style of three piece box has the stitching flanges made a part of the body blank and is usually assembled on a box stitcher, a nub being placed over the end of the arm which forms a guide or spacer to bring the stitches at the center of the flange—a panel holder also being furnished for convenience. The operator first pushes the top flap of one end panel into the panel holder, then folds up the body blank into shape and pushes the same over the end panel. By holding the sides firmly in the hand the end panel is also held in position, and the box placed over the stitching arm and the bottom flange attached by means of a single stitch in the center. The three flanges are now stitched, tie stitches usually being placed at the top and bottom of the side flanges for greater strength. When offset slotting is used, with the bottom corners overlapped, a stitch should be placed as close as possible to the overlap, and double stitches in the overlap itself. A machine with a V arm may also be used, in which case the stitches are placed at an angle of 45 deg. to the grain or corrugation of the board, which gives a stronger joint.

Another type of this box has the stitching flanges made a part of the end panels, and is assembled on a special doublehead stitcher with 45 deg. heads. A movable and adjustable work table is placed between the stitcher heads, the edges of the table serving as guides in the assembly of the box. The first step consists in laying the body blank on the table with one top flap bent down in front of the operator, who holds the two end panels in position against the sides of the table so that the stitching flanges overlap the first side of the box in proper position for stitching. One stitch is placed while the table is in its outward position, the table pushed in and the remainder of the stitches placed in order, automatically spaced. The body blank with the ends attached is then moved forward and bent over the end of the table, thus presenting the bottom for stitching. The flanges on the bottom of the ends are folded in place and stitched as before. The third operation is a repetition of the second and completes the assembly of the box.

The second style of box can also be assembled on a V arm machine, one side at a time, but the speed is less than when a double head is employed.

RECESSED END BOXES

These may be stitched on regular box stitchers equipped with a gauge to properly position the stitches in the center of the flanges. If desired, an adjustable table can be placed below the clincher arm to support the box while being stitched, especially after it has been loaded.

TELESCOPE BOXES

The blanks for heavy telescope boxes are received flat by the customer and may be creased twice at each corner, with diagonal slotting, so that the corner flaps fold up in triangular form, either against the ends or the sides of the box as desired. This construction is shown in Fig. 1 and Fig. 2.

The flaps are stitched on a box stitcher in the manner shown, the number of stitches placed depending upon the weight and character of the contents. Sometimes one of the triangular flaps is folded outside of the end, and the other inside of the side, both being stitched in place to give added strength. Another method of making up such boxes is to crease and slot the corners so that when assembled, rectangular corner flaps are formed which are folded up against either the end or the side of the box as desired. This construction is shown in Fig. 3 and Fig. 4.

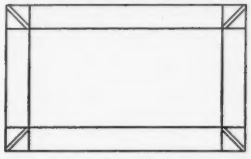


Fig. 1

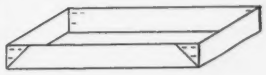


Fig. 2

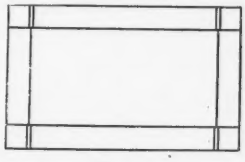


Fig. 3

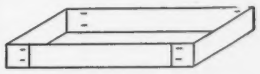


Fig. 4

FOLDING SUIT BOXES

These are usually stitched by hand on single head box stitchers provided with gauges. Duplex head, or multiple head stitchers may be used, however.

WOOD END BOXES

Wood cleats are frequently applied to the end panels of three piece boxes; also panel boxes are often made up with wood frames and fibre sheets.

The wood is usually $^5/_{16}$ in. to $^3/_8$ in. in thickness, and the board may be .100 in. or more thick. This combination of materials can be stitched on a standard box stitcher, but a special wire draw gear may be required in order to form staples with a sufficient length of leg to penetrate the wood and fibre and clinch on the other side.

CRACKER CADDY COVERS

The covers of the familiar cracker caddy are about $10^1/_2$ in. square, with flaps that are from $^3/_4$ in. to

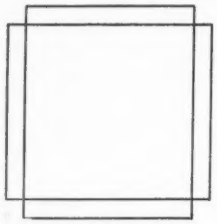


Fig. 5

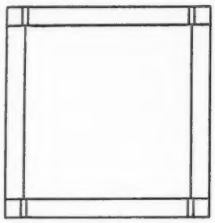


Fig. 6

1 in. wide. The flaps may be arranged in two ways, as shown in Fig. 5 and Fig. 6.

When the corners are cut out as in Fig. 5, the covers are stitched on a corner stay machine, using a stitch that has the crown bent at an angle of 90 deg., one leg being clinched in each flap. The driver is cut out in the center at an angle to drive the stitch with a 90 deg. angle crown, and a moving clincher mechanism is employed that clinches the staple legs flat against the flaps, which are brought tightly together. The arm of the machine is also shaped with a 90 deg. angle. In practice the operator sits in front of the machine and stitches the four corners in succession, frequently working at a rate of 15 or more covers per minute.

While the usual type of caddy cover is cut out at the corners, the one shown in Fig. 6 is sometimes used. This involves no more material, but makes use of the corner pieces (cut out in the other type) to strengthen the corners of the cover, slotting being employed as shown.

SHOPPING BAGS

One important use of box stitching is found in the attachment of handles to paper shopping bags. The handle itself is made of twisted fibre stock about $^1/_8$ in. to $^3/_{16}$ in. in diameter. The handle is bent to shape and placed in position with the two ends overlying the folded top of the bag, and two stitches are placed in each end to hold the same to the bag, a strip of fibre board being often inserted under the fold to increase the holding power. Standard box stitchers, fitted with gauges, are employed, but the bottom of the driver has a round groove cut in it which fits over the handle of the material, the driven stitches thus presenting a neat appearance and at the same time holding the handle securely. Duplex head machines may also be used for this work, gauges being employed to hold the two ends of the handle material in proper position for stitching.

BAG CLOSING

The tops of filled paper bags are often closed by wire stitching, using standard box stitchers. The top of the bag is either folded over once, or a double seal fold may be used, and two or more stitches inserted, fine wire such as No. 20, No. 25 or No. 1 Hybar being ordinarily used. A sufficiently light wire should be employed so that when the joint is pulled apart the wire will be held in the bag material and not loosened so that it can fall into the bag.

The sealing of heavy bags is best done on a machine with a horizontal stitcher head, the stitches being driven horizontally instead of vertically as usual. A table equipped with rolls is placed under the stitcher, or a standard conveyor is used, on which the bags stand with the flaps at the right height for closing. The top flaps are folded down and guided into the stitcher head between the driver and the clincher, using a bent sheet metal guide.

MISCELLANEOUS USES

Box stitchers are also used for a wide variety of other operations such as attaching articles to cards; fastening sheets of insulating strips together; holding the ends of gaskets; assembling box specialties; stitching the ends of fibre drums; forming attachment hooks on automobile upholstery; attaching canvas backs and seats on lawn and porch furniture; and for the assembly of berry baskets, display boxes, pastry containers, book matches.

Special attachments, guides, feeding mechanisms, etc., can be installed to facilitate any of these operations where high production is desired.

BOTTOM STITCHING

A bottom stitcher is nothing but a standard box stitcher without the clincher arm, a vertical post being substituted which is mounted on the base casting or frame. The post is $1^1/_2$ in. to $2^1/_2$ in. in diameter and the clincher is fitted into the top, which is reduced in area to 1 in. to $1^1/_2$ in. in diameter. The head of the post is adjustable, up or down, by hand to accommodate different thicknesses of board; and is usually constructed with a heavy spring inside the post, so that if extra heavy work is inserted without proper adjustment, the spring will give and the stitcher head not be damaged by the strain. The post is hinged at the bottom, and by depressing a special pedal may be tilted forward to permit easy insertion of the box before stitching. The best types of bottom stitchers have a considerable opening between the top of the post and the stitcher head, and when small or medium size boxes are being stitched the operator can usually place them over the post without tilting the latter forward, thus saving time in the operation. (This is the usual practice when stitching the bottoms of cracker caddies.) The regular operating pedal is then used to set the stitcher in operation. In some

machines a single pedal is employed, and the post normally tilted in forward position. When the pedal is depressed the post is first moved into vertical position and locked in place, and the stitching then commences without further movement of the pedal. The stitching is not necessarily continuous, since by partly releasing the foot pedal the operation can be interrupted without releasing the post from its locked position.

Duplex head bottom stitchers are also used; a single stitcher head being arranged to drive two stitches at once, with the crowns in line and spaced two and one-half inches apart. A short bar is placed on the top of the bottom post, fitted with two clinchers properly spaced. Double head bottom stitchers have two stitcher heads which may be placed in fixed position (nonadjustable) for repetitive work on one side of box, or which may have narrow stitcher heads adjustably mounted. In either case a bar is fastened to the top of the post in which the clincher blocks are mounted, and for the adjustable machine the clincher blocks are movable over a certain range. For wide changes of adjustment several clincher bars may be furnished.

BOTTOM STITCHING OF SLOTTED CONTAINERS

In many industries it has been found good practice to stitch the bottom flaps of slotted containers before they are loaded, the advantage being that the box is thus held firmly in shape with a secure bottom closure, while the goods are being inserted. In the glass bottle industry, for example, cases are usually bottom stitched, and after loading the top flaps are temporarily sealed by spot gluing, temporary stitching or taping and then shipped to the user, who fills the empty bottles, labels them, reloads in the box in which the empties were received and then permanently seals the tops.

Bottom stitching gives a secure and strong attachment of the bottom flaps, unaffected by moist conditions of storage which would weaken a closure made with tape or glue. Furthermore, cases can be bottom stitched very much more rapidly than they can be glued or taped. Several conditions of bottom stitching are met with, the more important being described below.

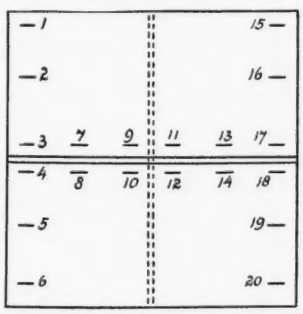


Fig. 7

All flaps of case meet in center. This condition is met in all square containers or in center special slotted cartons. When using a single head machine the stitches may be placed in the order shown in Fig. 7, or the stitches along the center may be placed first to hold the box in shape and the ends then stitched. The box should be held firmly from the two sides so as to hold the box square and avoid any gap between the outer flaps. The stitches should not be over $2^1/_2$ in. apart and the stitches along the edges of the abutting outer flaps are usually placed close to the edge. Double stitches are often placed at 9, 10, 11 and 12 the better to hold the inner flaps to the outer. Care should be taken that the stitches are tightly clinched so that the inside of the box will be smooth. When stitching corrugated boxes the container may be held at an angle to the machine, thus allowing stitches to be driven diagonally across the corrugations to give greater holding power.

Outer flaps meet, inner flaps not over 6 in. apart. The same method of stitching is used on slotted cartons which are not square, but in which the inner flaps are not more than six inches apart. No stitches, of course, are placed except where there are two thicknesses of board.

Outer flaps meet, inner flaps over 6 in. apart. Where the inner flaps are over 6 in. apart the Classification requires that if wire stitching is used, the outer flaps must be overlapped one inch or more and attached by wire stitches not over $2^1/_2$ in. apart.

Outer flaps overlapped. Containers of this construction are much used in the shoe and other industries, and when stitched on a single head machine, the center overlap (1 in. or more) is stitched first, the sides of the box being firmly held between the hands of the operator. As shown in Fig. 8, the stitches are placed across the overlap as the box is most easily held when the seam, or length of the box, is in the direction of the arm of the machine. The stitches on the ends may be placed either in the same direction as those on the seam or at 45 deg. or 90 deg. Of course all stitches may be placed parallel to the seam, but this is slower and not usually done. When the outer flaps are overlapped one inch or more the box may be of any length, without regard to the space between the ends of the inner flaps.

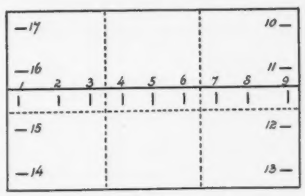


Fig. 8

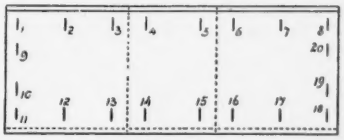


Fig. 9

Full overlap boxes. Boxes with the bottom flaps fully overlapped are often sealed with glue; but when wire stitched it is usual to cut down the overlap to 1 in. in order to save material, except where the case is very long and narrow and extra

rigidity is wanted. Should it be desired to bottom stitch such a box, it would be done as shown in Fig. 9.

Double head bottom stitching. Fig. 10 shows a

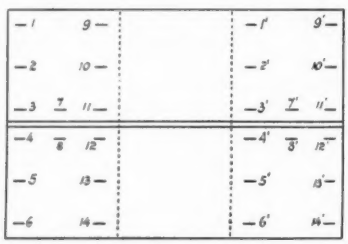


Fig. 10

method of bottom stitching of boxes, the outer flaps of which meet and the inner flaps meet or are not over 6 in. apart. The heads are set so that one stitch will be driven just inside the end of the box (1) and the other just inside the edge of the opposite inner flap (1′). The ends of the clincher bar form guides for spacing the stitches from the side of the box. The stitches are placed in the order indicated, one side being completed first, the box moved over on the post, and the other two rows placed. The stitches numbered 7, 7′, 8 and 8′, while they may be required under the Classification for relatively long boxes, are nevertheless not usually placed. An adjustable table is often fitted around the post to support the projecting top flaps of the box, which helps to hold the bottom flaps in flat position during the stitching operation. A disadvantage of double head stitching is that more stitches must be placed than are required by the Classification, the excess stitches being numbers 9, 10, 13, 14, 1′, 2′, 5′ and 6′. The extra cost of these eight stitches is, however, usually not of importance compared with the value of the extra speed of the operation.

In single head stitching from three to six boxes per minute can be bottom stitched by one operator, while on a double head machine the output can be increased by 75 per cent or more. The output, however, will not be doubled, since an important part of the time of the operation is required for folding the box in shape, placing on the machine, and for removing the finished box after stitching.

Duplex head bottom stitching. A duplex head stitcher, driving two stitches at once, spaced $2^1/_2$ in.

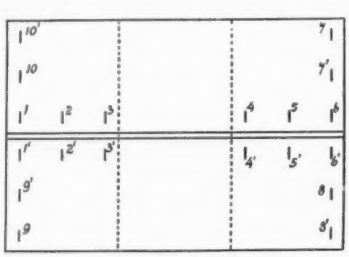


Fig. 11

on centers, can be used on all boxes, whether the outer flaps meet or overlap; whereas a double head stitcher cannot be used on overlapped flaps since there is no way of placing the stitches in the center part of the seam. When used on a box with the outer flaps meeting (Fig. 11) the center seam is stitched first, the stitches straddling the joint. By holding the box at an angle to the machine the stitches may be driven diagonally and thus brought closer to the joint than when placed at right angles. The ends of the box are then stitched, the stitches being placed in the order shown, two at a time.

When stitching a box with center overlap (Fig. 12) it is easier to stitch the ends first (since the box can be better held if both ends are equidistant from the body), the center seam being then completed. This can be reversed, however, and the center seam stitched first, but in this case one arm must be extended over the box to hold the opposite side until the first stitches have been driven. Duplex head stitching is not quite as fast as double head stitching since the position of the stitches in the center of the box, or on the overlap, must be judged by the eye

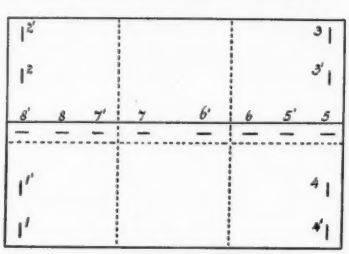


Fig. 12

(as in the case of single head stitching) although the stitches along the ends may be rapidly driven because the clinching arm forms a guide. It is, however, a method of wider application since it can be used without any machine adjustment for all sizes of boxes and for all flap constructions, and is much faster than single head stitching.

Cracker caddies. These small cracker boxes have the bottom flaps overlapped about $^3/_4$ in., and two stitches are used on the small sizes and four or more on large caddies. Single or duplex head machines may be used, with two operatives, one of whom folds the box in shape and hands it to the second who does the stitching. Speeds of 30 boxes per minute on single head machines are not unusual. Caddies are not covered by the Classification requirements, since they are for outside shipping containers, and therefore the usual number of stitches are not required for sealing the bottom of the box.

Top stitching. A standard top stitcher comprises a box stitcher without the solid clincher arm, in replacement of which a thin steel blade is used with the clincher set in the end. This blade anvil is made of forged steel and is tapered toward the front to make it as thin as possible, being somewhat flexible as a result. These machines are made with blades up to 33 in. in length, which is adequate to handle any length of box in regular use.

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Dennison Mfg. Co., Framingham, Mass.—Insert 268–269
Du-Tone Ribbon Corp., New York, N. Y.—207
Freydberg Bros., Inc., New York, N. Y.—249
Hy-Sil Mfg. Co., Revere, Mass.
Milwaukee Printed String Co., Milwaukee, Wis.
National Tinsel Mfg. Co., Manitowoc, Wis.
Stark Bros. Ribbon Corp., New York, N. Y.
Taft Co., R. C., Chicago, Ill.
W-E-R Ribbon Corp., New York, N. Y.

BUYERS' DIRECTORY of the PACKAGING INDUSTRIES

BOX STAYS
(White, Gray, Plain & Creased)

McLaurin-Jones Co., Brookfield, Mass.—Insert—302-303
Nashua Gummed & Coated Paper Co., Nashua, N. H.—Insert 174-175

BOX TOP PADDING

American Lace Paper Co., Milwaukee, Wis.
Kimberly-Clark Corp., Neenah, Wis.—230-231
Milwaukee Lace Paper Co., Milwaukee, Wis.
Sweetnam, Inc., Geo., Cambridge, Mass.—287
Traver Corp., Chicago, Ill.
Union Wadding Co., Pawtucket, R. I.

BOX WRAPS

See Lithographers and various paper headings

BOXES, CELLULOID, ODORLESS

Celluloid Corp., New York, N. Y.—199
Hygienic Tube & Container Co., Newark, N. J.
Lusteroid Container Co., Inc., South Orange, N. J.—239
See-Thru Container Corp., New York, N. Y.—304
Sillcocks-Miller Co., South Orange, N. J.—239

BOXES, CLOTHING and MILLINERY

Acme Folding Box Co., St. Louis, Mo.
American Paper Box Co., Grand Rapids, Mich.
Bartgis Bros. Co., Ilchester, Md.
Brown & Bailey Co., Philadelphia, Pa.
Climax Mfg. Co., Castorland, N. Y.
Elkin Mfg. Co., Philadelphia, Pa.
Fibreboard Products, Inc., San Francisco, Cal.
Gardner-Richardson Co., Middletown, O.
Hatch Co., C. F., Lowell, Mass.
Ideal Stitcher & Mfg. Co., Racine, Wis.
Lindley Box & Paper Co., Marion, Ind.
Morris Paper Mills, Chicago, Ill.
Natick Box & Board Co., Natick, Mass.
National Folding Box Co., New Haven, Conn.
National Metal Edge Box Co., Philadelphia, Pa.—253
Spear Box Co., New York, N. Y.
Trinity Paper Box Co., Dallas, Tex.

BOXES, CORRUGATED and SOLID FIBRE

Acme Staple Co., Camden, N. J.—158
Agar Manufacturing Corp., Whippany, N. J.
Albany Corrugated Container Corp., Albany, N. Y.
American Can Co., New York, N. Y.
American Corrugated Paper Products Corp., New York, N. Y.
American Corrugating Co., Grand Rapids, Mich.
Andrew Co., O. B., Chattanooga, Tenn.
Ashtabula Corrugated Box Co., Ashtabula, O.
Bird & Son, Inc., East Walpole, Mass.
Brack Container Corp., Rochester, N. Y.
Consolidated Paper Co., Monroe, Mich.
Container Corp. of America, Chicago, Ill.
Corning Fibre Box Corp., The, Corning, N. Y.
Corrugated Container Co., Philadelphia, Pa.
Corrugated Container Corp., Columbus, O.
Crescent Box Corp., Philadelphia, Pa.
Densen-Banner Co., Inc., New York, N. Y.
Dexter Folder Co., New York, N. Y.—201-206
Eggers-O'Flying Co., Omaha, Neb.
Evans Fibre Box Co., Chicago, Ill.
Federal Container Co., Philadelphia, Pa.
Fibreboard Products, Inc., San Francisco, Cal.
Florida Container Corp., Tampa, Fla.
Fort Wayne Corrugated Paper Co., Fort Wayne, Ind.
Gair Co., Robert, New York, N. Y.
Gardner-Richardson Co., The, Middletown, O.
Gaylord, Inc., Robert, St. Louis, Mo.
Hercules Paper Box Co., Columbus, O.
Hinde & Dauch Paper Co., New York, N. Y., Boston, Mass., Philadelphia, Pa., Baltimore, Md., Richmond, Va., Buffalo, N. Y., Cleveland, O., St. Louis, Mo., Kansas City, Kansas, Toronto, Ont., Montreal, Que.
Hummel & Downing Co., Milwaukee, Wis.
Hunt-Crawford Co., The, Coshocton, O.
Inland Box Corp., Indianapolis, Ind.
Iowa Fibre Box Co., Keokuk, Iowa
Kieckhefer Container Corp., Milwaukee, Wis.
Knowlton, M. D., Co., Rochester, N. Y.—234
Kress Box Co., F. J., Pittsburgh, Pa.
Mengel Co., Louisville, Ky.
National Container Corp., Long Island City, N. Y.
National Metal Edge Box Co., Philadelphia, Pa.—253
New Orleans Corrugated Box Co., Inc., New Orleans, La.
Ottawa River Paper Co., Toledo, O.—193
Owens-Illinois Glass Co., Toledo, O.—259-261
Paraffine Co., The, Inc., San Francisco, Cal.
River Raisin Paper Co., Monroe, Mich.
Rochester Folding Box Co., The, Rochester, N. Y.
Rockford Fibre Container Co., Rockford, Ill.
Schmidt Lithograph Co., San Francisco, Cal.
Schultz Co., A. Geo., Milwaukee, Wis.
Southern Container Co., Houston, Texas
Texas Corrugated Box Co., Dallas, Texas
Wabash Fibre Box Co., Terre Haute, Ind.
Waldorf Paper Products Co., St. Paul, Minn.
Warner Bros. Co., Bridgeport, Conn.—297
Weber & Co., David, Philadelphia, Pa.

BOXES, FANCY WOOD

American Art Works, The, Coshocton, O.
Arrow Mfg. Co., Inc., Hoboken, N. J.—168
Artwood Products Co., Terre Haute, Ind.
Dennison Mfg. Co., Framingham, Mass.—Insert 268-269
Mele Mfg. Co., New York, N. Y.
New England Box Co., Greenfield, Mass.
Ornamental Wood Packaging Co., Chicago, Ill.
Peterson Bros., Chicago, Ill.—300
Pilliod Cabinet Co., The, Swanton, O.
Ruechert Mfg. Co., Providence, R. I.
Warner Bros. Co., Bridgeport, Conn.—297

BOXES, FOLDING and DISPLAY CARTONS

Ace Carton Corp., Chicago, Ill.
Acme Folding Box Co., New York, N. Y.
Albert Paper Box Co., Inc., Brooklyn, N. Y.
American Colortype Co., Chicago, Ill.
American Folding Box Co., St. Louis, Mo.
Atlantic Carton Corp., Norwich, Conn.
Badger Carton Co., Milwaukee, Wis.
Bloomer Bros. Co., Newark, Wayne County, N. Y.
Brooklyn Carton Co., Inc., Brooklyn, N. Y.
Brooks Bank Note Co., Springfield, Mass.
Brooks & Porter, Inc., New York, N. Y.
Brown & Bailey Co., Philadelphia, Pa.
Burt & Fletcher Co., Kansas City, Mo.
Cambridge Paper Box Co., Cambridge, Mass.
Campbell Box & Tag Co., South Bend, Ind.—185
Chicago Carton Co., Chicago, Ill.
Chippewa Paper Products, Inc., Chicago, Ill.—307
Consolidated Paper Co., Monroe, Mich.
Container Corp. of America, Chicago, Ill.
Continental Folding Paper Box Co., Ridgefield, N. J.
Crook Paper Box Co., Kansas City, Mo.
Crown Paper Box & Label Co., San Antonio, Texas
Densen-Banner Co., Inc., New York, N. Y.
Deisroth Co., Inc., W. H., Philadelphia, Pa.—214
Dennison Mfg. Co., Framingham, Mass.—Insert 268-269
Dowd Carton Co., M. S., Hartford, Conn.
Downingtown Paper Box Co., Downingtown, Pa.
Einson-Freeman Co., Inc., Long Island City, N. Y.—212
Empire Box Corp., New York, N. Y.
Fibreboard Products, Inc., San Francisco, Cal.
General Carton Corp., Brooklyn, N. Y.
Fitzhugh, Inc., Wm. W., Brooklyn, N. Y.
Forbes Litho. Mfg. Co., Boston, Mass.—194-195
Fort Orange Paper Co., Castleton-on-Hudson, N. Y.—245
Fort Wayne Paper Goods Co., Fort Wayne, Ind.
Gair Co., Robert, New York, N. Y.
Gardner-Richardson Co., Middletown, O.
Gebhart Folding Box Co., Dayton, O.
Gereke-Allen Carton Co., St. Louis, Mo.
Hatch Co., C. F. Lowell, Mass.
Hinde & Dauch Paper Co., Sandusky, O.
Howell & Co., F. M., Elmira, N. Y.
Hummel & Downing Co., Milwaukee, Wis.
Illinois Carton & Label Co., Elkhart, Ind.
Indianapolis Paper Container Co., Indianapolis, Ind.
International Folding Paper Box Co., North Bergen, N. J.
International Printing Co., Indianapolis, Ind.
Interstate Folding Box Co., Middletown, O.
Lebanon Paper Box Co., Lebanon, Pa.—242
Lord Baltimore Press, Baltimore, Md.
Lowe Paper Co., Ridgefield, N. J.—Insert 276-277
Menasha Products Co., Menasha, Wis.
Michigan Carton Co., Battle Creek, Mich.—236
Milprint Products Corp., Milwaukee, Wis.
Morris Paper Mills, Chicago, Ill.
Myers, Inc., J. & P. B., Jersey City, N. J.

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National Folding Box Co., New Haven, Conn.
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New York Label & Box Corp., New York, N. Y.
Paper Package Co., Indianapolis, Ind.
Pictorial Paper Package Corp., Aurora, Ill.
Randolph Box & Label Co., Chicago, Ill.
Reynolds Metals Co., Inc., New York, N. Y.—Insert 284–285
Richardson-Taylor-Globe Corp., Cincinnati, O.—269
Robertson Paper Box Co., Inc., Montville, Conn.
Rochester Folding Box Co., Rochester, N. Y.
Rossetti Lithographing Co., New York, N. Y.
Russell Box Co., Medford, Mass.
Sample-Durick Co., Springfield, Mass.
Schmitt, Geo. & Co., Inc., Brooklyn, N. Y.
Schultz Co., A. Geo., Milwaukee, Wis.
Shoup-Owens Co., Hoboken, N. J.—306
Shuttleworth Carton Co., Inc., New York, N. Y.
Simplex Paper Box Corp., Lititz, Pa.—294
Somerville Paper Boxes, Ltd., London, Ontario, Canada—298
Stecher-Traung Lithograph Corp., Rochester, N. Y.
Stecker Paper Box Co., Detroit, Mich.
Sutherland Paper Co., Kalamazoo, Mich.
Trenton Folding Box Co., Trenton, N. J.
Trinity Paper Box Co., Dallas, Tex.
U. S. Printing & Litho. Co., Cincinnati, O., Baltimore, Md., New York, N. Y.—Insert 298–299
Waldorf Paper Products Co., St. Paul, Minn.
Warner Bros. Co., Bridgeport, Conn.—297
Wilkata Folding Box Co., Kearny. N. J.
Wolverine Carton Co., Grand Rapids, Mich.

BOXES, MAILING

Brown & Bailey, Philadelphia, Pa.
Cambridge Paper Box Co., Cambridge, Mass.
Campbell Box & Tag Co., South Bend, Ind.—185
Chicago Carton Co., Chicago, Ill.
Cleveland Container Co., Cleveland, O.—191
Consolidated Paper Co., Monroe, Mich.
Container Corp. of America, Chicago, Ill.
Cross Paper Products Corp., New York, N. Y.—198
Deisroth Co., Inc., W. H., Philadelphia, Pa.—214
Dennison Mfg. Co., Framingham, Mass.—Insert 268–269
Dodge Paper Box Co., E. F., Leominster, Mass.
Fort Orange Paper Co., Castleton-on-Hudson, N. Y.—245
Fort Wayne Paper Goods Co., Fort Wayne, Ind.
Gair Co., Robert, New York, N. Y.
Gardner-Richardson Co., Middletown, O.
Gaylord, Inc., Robert, St. Louis, Mo.
Gebhart Folding Box Co., Dayton, O.
Gereke-Allen Carton Co., St. Louis, Mo.
Hatch Co., C. F., Lowell, Mass.
Hercules Paper Box Co., Columbus, O.
Hinde & Dauch Paper Co., The, New York, N. Y., Boston, Mass., Philadelphia, Pa., Baltimore, Md., Richmond, Va., Buffalo, N. Y., Cleveland, O., St. Louis, Mo., Kansas City, Kans., Toronto, Ont., Montreal, Que.
Howell Co., F. M., Elmira, N. Y.
Illinois Carton & Label Co., Elkhart, Ind.
Interstate Folding Box Co., Middletown, O.
Lebanon Paper Box Co., Lebanon, Pa.—242
Lord Baltimore Press, Baltimore, Md.
Mason Box Co., The, Attleboro Falls, Mass.—275–276
Myers, Inc., J. & P. B., Jersey City, N. J.
National Folding Box Co., New Haven, Conn.
National Metal Edge Box Co., Philadelphia, Pa.—253
New York Label & Box Corp., New York, N. Y.
Owens-Illinois Glass Co., Toledo, O.—259–261
Paper Package Co., Indianapolis, Ind.
R. C. Can Co., St. Louis, Mo.—256
Richardson-Taylor-Globe Corp., Cincinnati, O.—269
Ritchie & Co., W. C., Chicago, Ill.—285
Rowell Co., E. N., Batavia, N. Y.
Sample-Durick Co., Springfield, Mass.
Schultz Co., A. Geo., Milwaukee, Wis.
Sears Paper Box Co., Merle, Danville, Ill.
Sefton National Fibre Can Co., St. Louis, Mo.—274
Shoup-Owens, Inc., Hoboken, N. J.—306
Shuttleworth Carton Co., Inc., New York, N. Y.
Simplex Paper Box Corp., Lititz, Pa.—294
U. S. Printing & Litho. Co., Cincinnati, O.—Insert 298–299
Warner Bros. Co., Inc., Bridgeport, Conn.—297
Waterbury Paper Box Co., Waterbury, Conn.—303
Whitney & Co., Inc., Leominster, Mass.
Young Bros., Providence, R. I.

BOXES, METAL

Aluminum Co. of America, Pittsburgh, Pa.—164
American Aluminum Ware Co., Newark, N. J.
American Can Co., New York, N. Y.
Anchor Cap & Closure Corp., Long Island City, N. Y.—220–221
Burdick & Son, Albany, N. Y.—183
Chase Brass & Copper Co., Inc., Container & Closure Division, New York, N. Y. (Powder, Rouge, Lipsticks, Compacts)
Continental Can Co., Inc., New York, N. Y.—166–167
Dennison Mfg. Co., Framingham, Mass.—Insert 268–269
Doehler Die Casting Co., Toledo, O.
Farrington Mfg. Co., Jamaica Plain, Boston, Mass.—219
Goertz & Co., A., Newark, N. J.
Heekin Can Co., Cincinnati, O.
Kep-Ark, Inc., Boston, Mass.—235
Majestic Metal Specialties, Inc., New York, N. Y.
Metal Package Corp., New York, N. Y.—251
Scovill Manufacturing Co., Waterbury, Conn.
Tin Decorating Co. of Baltimore, The, Baltimore, Md.—282

BOXES, METAL (Covered and Lined)

Arrow Mfg. Co., Inc., Hoboken, N. J.—168
Dennison Mfg. Co., Framingham, Mass.—Insert 268–269
Farrington Mfg. Co., Jamaica Plain, Boston, Mass.—219

BOXES, MOLDED (Plastic)

Ackerman Rubber and Plastic Molding Co., The, Cleveland, O.
American Insulator Corp., New Freedom, Pa.
American Record Corp., Scranton, Pa.—161
Armstrong Cork & Insulation Co., Lancaster, Pa.—172–173
Auburn Button Works, Inc., Auburn, N. Y.—162
Bakelite Corp., New York, N. Y.—176
Boonton Molding Co., Boonton, N. J.
Celluloid Corp., New York, N. Y.—199
Chicago Molded Products Corp., Chicago, Ill.—188
Colt's Patent Fire Arms Mfg. Co., Hartford, Conn.
Diemolding Corp., Canastota, N. Y.
Durite Plastics, Division of Stokes & Smith Co., Philadelphia, Pa.—163, 288–289
General Electric Co., Plastics Dept., River Works, West Lynn, Mass. (Textolite, Cetec, Fabroil)
General Industries Co., The Elyria, O.
General Plastics, Inc., North Tonawanda, N. Y.—165
Kurz-Kasch Co., Dayton, O.
Mack Molding Co., Wayne, N. J.
Mundet Cork Corp., Brooklyn, N. Y.—237
Northern Industrial Chemical Co., Boston, Mass.
Norton Laboratories, Inc., Lockport, N. Y.
Reilly Tar & Chemical Corp., Indianapolis, Ind.—258
Resinox Corp., New York, N. Y.—228
Reynolds Spring Co., Jackson, Mich.
Shaw Insulator Co., Irvington, N. J.
Synthetic Plastics, Inc., New York, N. Y.
Tech-Art Plastics Co., Long Island City, N. Y.
Toledo Synthetic Products, Inc., Toledo, O.—213
Waterbury Button Co., The, Waterbury, Conn.—222
Wheeling Stamping Co., Wheeling, W. Va.—302

BOXES, PAPER SET-UP

Letters indicate general class of boxes manufactured:
A—Covering Machine-made Boxes.
B—Automatic Machine-made Boxes.
C—Hand-made Boxes.
D—Hand-made and Machine-made Boxes.
g.l.—Indicates manufacture of general line of boxes in the class specified, except certain types which are specialties or specialized in, such as Candy, Holiday, Face Powder, Perfumery, Carbon Paper, Jewelry, Cases and Shelf Boxes, Hinged Lid and Display, Slide Boxes, Cigarette Boxes, Mailing Boxes and special small boxes. These are indicated by name.
Alderman Paper Box Co., Rochester, N. Y. A, B, C and D, g.l.
Arrow Mfg. Co., Inc., Hoboken, N. J.—168 C, Jewelry, Specialties, g.l. Metal, Satin lined, Wood, Leather, Paper
Bisler, Inc., G. A., Philadelphia, Pa. A, B, C and D, candy and holiday

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A, g.l.

Buedingen Co., Inc., Ferdinand, Rochester, N. Y.—174
A, C and D, g.l.

Buedingen & Son, Wm., Rochester, N. Y.—281

Buffington Co., F. H., Providence, R. I.
A, g.l.

Burt Co., Ltd., F. N., Buffalo, N. Y.—200
A, B, C and D, face powder, perfumery, pill and drug, slide boxes, cigarette boxes

Cambridge Paper Box Co., Cambridge, Mass.
A, B, C, D, g.l., face powder, perfumery, pill and drug, slide, cigarette, candy, mailing

Campbell Box & Tag Co., South Bend, Ind.—185

Chippewa Paper Products, Inc., Chicago, Ill.—307

Danbury Square Box Co., The, Danbury, Conn.
A, C and D, g.l.

Deisroth Co., Inc., W. H., Philadelphia, Pa.—214
A, B, C, D, g.l., candy, holiday, mailing

Dennison Mfg. Co., Framingham, Mass.—Insert 268–269
D—complete line of all types and specialties

Dix, Inc., J. J., New York, N. Y.

Dodge Paper Box Co., E. F., Leominster, Mass.
C, D, g.l.

Doolittle Co., The, E. J., Meriden, Conn.
A, C and D, g.l.

Dorfman & Co., Inc., A., New York, N. Y.

Du-Frank Corp., Brooklyn, N. Y.

Fairchild Corp., E. E., Rochester, N. Y.
A, B, C and D, g.l.

Fisher Paper Box Co., Inc., Minneapolis, Minn.
A, B, C and D, g.l.

Fleisig, Inc., H., New York, N. Y.

Fort Wayne Paper Box Co., Fort Wayne, Ind.
A, B, C and D, g.l.

Grand Rapids Paper Box Co., Grand Rapids, Mich.
A, B, C and D, g.l.

Great Lakes Paper Box Co., The, Cleveland, O.

Hatch Co., C. F., Lowell, Mass.
A, B, C and D, g.l.

Henry Co., Ira L., Watertown, Wis.
A, C and D, g.l.

Hess & Densen, Inc., New York, N. Y.
A, B, C, D

Hollywood Paper Box Corp., Hollywood, Cal.
A, B and D, g.l.

Holman Paper Box Co., St. Louis, Mo.
A, B and D, g.l.

Howell & Co., F. M., Elmira, N. Y.
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Illinois Paper Box Co., Chicago, Ill.
A, C and D, g.l.

Illinois-Star-Schulz Paper Box Co., Chicago, Ill.

Jones Paper Box Co., Jesse, Philadelphia, Pa.
A, B, C and D, g.l.

Just Mfg. Co., The, Brooklyn, N. Y.
A, D

Kalamazoo Paper Box Co., Kalamazoo, Mich.
A, B, C and D, g.l.

Kentucky Paper Box Co., Inc., Louisville, Ky.
A, B, C and D, g.l.

Keystone Box Co., Pittsburgh, Pa.
A, B, C and D, g.l.

Killian Co., George P., Washington, D. C.
A, B, C and D, g.l.

Klein & Co., New York, N. Y.
Candy & Holiday

Kroeck Paper Box Co., Chicago, Ill.
A, g.l.

Landowne Co., J., Inc., Brooklyn, N. Y.
D, g.l.

Lebanon Paper Box Co., Lebanon, Pa.—242
A, B, C and D, g.l. Mitre Cigar Boxes

Lorscheider-Schang Co., Rochester, N. Y.
A, B, C and D, g.l.

Maryland Paper Box Co., Baltimore, Md.
A, B, D, g.l., Holiday, shelf

Mason Box Co., The, Attleboro Falls, Mass.—275–276
A, B, C and D, g.l.

Miller, W. P., Inc., Philadelphia, Pa.
A, B, C and D, g.l.

Molitor Box Co., Milwaukee, Wis.
A, B, C and D, g.l.

National Folding Box Co., New Haven, Conn.

National Metal Edge Box Co., Philadelphia, Pa.—253

Neumann Co., The Robert, Cincinnati, O.
A, C and D, g.l.

New York Label & Box Corp., New York, N. Y.
A, B, g.l., pill and drug

Norristown Box Co., Norristown, Pa.
A and B, g.l.

Ohio Boxboard Co., Cleveland, Ohio
A, B, C and D, g.l.

Oklahoma Paper Co., Oklahoma City, Okla.

Paper Package Co., Indianapolis, Ind.
A, B, C and D, g.l.

Pearson Paper Box Co., Kansas City, Mo.
A, C and D, g.l.

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Pharmacy Paper Box Co., Chicago, Ill.
A, B and C

Pictorial Paper Package Co., Aurora, Ill.
A, B, C and D, g.l.

Plumly, E. K., Philadelphia, Pa.
D, g.l., Perfume

Randolph Paper Box Co., Richmond, Va.
A, B and D, g.l.

Rapid Cutting Die Co., Brooklyn, N. Y.
A, B, g.l.

Ritchie & Co., W. C., Chicago, Ill.—285
A, B, C and D, g.l.

Rowell Co., Inc., E. N., Batavia, N. Y.
A, B and D, g.l.

Schleicher Paper Box Co., F. J., St. Louis, Mo.
B, C and D, candy

Schoettle Co., Edwin J., Philadelphia, Pa.
A, B, C and D, g.l.

Schultz & Co., H., Chicago, Ill.
A, B, C and D, g.l.

Schultz Co., A. Geo., Milwaukee, Wis.
A, B, C and D, g.l.

Sears Paper Box Co., Merle, Danville, Ill.
A, B, C and D, g.l.

Seeley Tube & Box Co., Newark, N. J.
A, B and D, g.l.

Shoup-Owens, Inc., Hoboken, N. J.—306
A, B, C, D, g.l.

Simplex Paper Box Corp., Lititz, Pa.—294

Smith Co., S. K., Chicago, Ill.—291

Somerville Paper Boxes, Ltd., London, Ontario—298

Spitzer Paper Box Co., Toledo, O.
A, B

Star Case Co., New York, N. Y.
C, Jewelry, Specialties, Leather

Stecker Paper Box Co., Detroit, Mich.

Trilsch Co., Oscar, Whitestone, Long Island, N. Y.
A, B, C, g.l.

Trinity Paper Box Co., Dallas, Tex.

Trum, Inc., E. J., Brooklyn, N. Y.
A and D, g.l.

United Paper Box Co., Chicago, Ill.

Voss Corp., Karl, 1100 Adams St., Hoboken, N. J.—306
Face Powder, perfumery, C, g.l.

Waldeck & Co., Jersey City, N. J.
A, B, C and D, g.l.

Warner Bros. Co., Bridgeport, Conn.—297
A, B, C and D

Waterbury Paper Box Co., Waterbury, Conn.—303
A, B, C and D, g.l.

Whitney & Co., Inc., Leominster, Mass.
A, B, C, D, g.l.

Wing Paper Box Co., Hendersonville, N. C.
g.l.

Young Bros., Providence, R. I.
A, B, C and D, g.l.

Youse, C. J., Co., Baltimore, Md.
A, B, C and D, candy

BOXES, WINDOW
(Transparent Cellulose)

Atlantic Carton Corp., Norwich, Conn.

Brooks & Porter, Inc., New York, N. Y.

Burt Co., Ltd., F. N., Buffalo, N. Y.—200

Cambridge Paper Box Co., Cambridge, Mass.

Campbell Box & Tag Co., South Bend, Ind.—185

Container Corp. of America, Chicago, Ill.

Deisroth Co., Inc., W. H., Philadelphia, Pa.—214

Dennison Mfg. Co., Framingham, Mass.—Insert 268–269

Empire Box Corp., Chicago, Ill.

Fort Orange Paper Co., Castleton-on-Hudson, N. Y.—245

Gair Co., Robert, New York, N. Y.

Hatch Co., C. F., Lowell, Mass.

Howell Co., F. M., Elmira, N. Y.

Interstate Folding Box Co., Middletown, O.

Lebanon Paper Box Co., Lebanon, Pa.—242

Milprint Products Corp., Milwaukee, Wis.

National Metal Edge Box Co., Philadelphia, Pa.—253

Richardson-Taylor-Globe Corp., Cincinnati, O.—269

Ritchie & Co., W. C., Chicago, Ill.—285

Rowell Co., E. N., Batavia, N. Y.

Russell Box Co., Medford, Mass.

Shoup-Owens, Inc., Hoboken, N. J.—306

Stecher-Traung Litho. Corp., Rochester, N. Y.

Voss Corp., Karl, Hoboken, N. J.—306

Warner Bros., Bridgeport, Conn.—297

Waterbury Paper Box Co., Waterbury, Conn.—303

Whitney & Co., Inc., Leominster, Mass.

CADDIES, CRACKER
(Moisture-proof and Grease-proof)

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Consolidated Paper Co., Monroe, Mich.

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Gardner-Richardson Co., Middletown, O.
Gaylord Co., Robert, St. Louis, Mo.
Hinde & Dauch Paper Co., St. Louis, Mo., Kansas City, Kansas, Toronto, Ont., Montreal, Que.
Hummel & Downing Co., Milwaukee, Wis.
Morris Paper Mills, Chicago, Ill.
National Metal Edge Box Co., Philadelphia, Pa.—253
River Raisin Paper Co., Monroe, Mich.
Rochester Folding Box Co., Rochester, N. Y.
Sefton National Fibre Can Co., St. Louis, Mo.—274
Traver Corp., Chicago, Ill.

CAN SEALING COMPOUNDS

Dewey & Almy Chemical Co., Cambridge, Mass.—208

CANS, FIBRE

American Can Company, New York, N. Y.
Boothby Fibre Can Co., Boston (Roxbury), Mass.
Cambridge Paper Box Co., Cambridge, Mass.
Canister Co., The, Phillipsburg, N. J.
Chicago Paper Tube & Can Co., Chicago, Ill.
Cin-Made Corp., Cincinnati, O.
Cleveland Container Co., Cleveland, O.—191
Cross Paper Products Corp., New York, N. Y.—198
Fibreboard Products, Inc., San Francisco, Cal.
Fonda Container Co., Inc., Utica, N. Y.
Gates Paper Co., Ltd., Los. Angeles, Cal.
Heekin Can Co., The, Cinncinnati, O.
Indianapolis Paper Container Co., Indianapolis, Ind.
Marathon Paper Mills Co., Rothschild, Wis.
Menasha Products Co., Menasha, Wis.
Molitor Box Co., Milwaukee, Wis.
Morris Paper Mills, Chicago, Ill.
National Paper Can Co., Milwaukee, Wis.
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Gair Co., Robert, New York, N. Y.
Gardner-Richardson Co., Middletown, O.
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Zapon Co., Hartford, Conn.

COLLAPSIBLE TUBES

See tubes, collapsible (aluminum, lead, tin and alloys)

COMPACTS, FANCY METAL CONTAINERS

Brass Goods Mfg. Co., Brooklyn, N. Y.
Bridgeport Metal Goods Mfg. Co., Bridgeport, Conn.
Chase Brass & Copper Co., Inc., Container & Closure Division, New York, N. Y.
Goertz Co., Inc., August, Newark, N. J.
Kolmar Laboratories, Newark, N. J.
Majestic Metal Specialties, Inc., New York, N. Y.
Sagamor Metal Goods Corp., New York, N. Y.
Scovill Mfg. Co., Waterbury, Conn.

CONTAINERS, MOLDED PULP (Bottles, Jars, etc.)

Hole-Tite Packing Corp., New York, N. Y.
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CONTAINERS, SULPHITE CYLINDRICAL AND NESTING

Boothby Fibre Can Co., Boston (Roxbury), Mass.
Fibreboard Products, Inc., San Francisco, Cal.
Individual Drinking Cup Co., Easton, Pa.
Iowa Fibre Box Co., Keokuk, Iowa
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Central Wire & Frame Co., New York, N. Y.
City Wire Frame Co., Chicago, Ill.
Kerr Wire Products Co., Chicago, Ill.
Nelke Sign Mfg. Co., Inc., New York, N. Y.
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Boston Excelsior Co., New York, N. Y.
Excelsior Wrapper Co., Chicago, Ill.
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Wortendyke Mfg. Co., Richmond, Va.

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Sinclair & Carroll Co., Inc., New York, N. Y.
Sinclair & Valentine, New York, N. Y.
Triangle Ink & Color Co., Inc., Brooklyn, N. Y.
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Cray-Finne Co., Inc., New York, N. Y.
Davids Ink Co., Thaddeus, New York, N. Y.
Eagle Printing Ink Co., New York, N. Y.
Fuchs & Lang Mfg. Co., New York, N. Y.
General Printing Ink Corp., New York, N. Y.
Huber, Inc., J. M., New York, N. Y.
International Printing Ink Corp., New York, N. Y.
Johnson, Inc., C., Eneu, Philadelphia, Pa.
Levey Co., Inc., Frederick H., New York, N. Y.
Morrill Co., Geo. H., Div. of Gen. Ptg. Ink, New York, N. Y.
Peerless Roll Leaf Co., Inc., Union City, N. J.
Sinclair & Carroll Co., Inc., New York, N. Y.
Sinclair & Valentine, New York, N. Y.
Standard Ptg. Ink Color Co., Inc., Brooklyn, N. Y.
Triangle Ink & Color Co., Brooklyn, N. Y.
Ullman Co., Sigmund, New York, N. Y.

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See Lithographers

JAR COVERINGS

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JARS (Packers' Tumblers)

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Capstan Glass Co., Connellsville, Pa.
Federal Glass Co., Columbus, O.
General Glass Co., Lancaster, O.
Hazel Atlas Glass Co., Wheeling, West Va.
Libbey Glass Mfg. Co., The, Toledo, O.
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Tygart Valley Glass Co., Washington, Pa.

JARS, STONE

U. S. Stoneware Co., New York, N. Y.

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American Label Co., The, New York, N. Y.
Arkadia Label Corp., New York, N. Y.
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Crown Paper Box & Label Co., San Antonio, Texas
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Grand Rapids Label Co., Grand Rapids, Mich.
Greene Co., Stephen, Philadelphia, Pa.
Hanograf Corp., New York, N. Y.
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Lord Baltimore Press, Baltimore, Md.
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Manhattan Label Co., New York, N. Y.
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Schmitt & Co., Inc., Geo., Brooklyn, N. Y.
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Howell & Co., F. M., Elmira, N. Y.
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United Mfg. Co., The, Springfield, Mass.
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Standards Insulation Co., East Rutherford, N. J.

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Brett Litho. Co., Long Island City, N. Y.
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Calvert Litho. Co., Detroit, Mich.
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Gugler Litho. Co., Milwaukee, Wis.
Haass Litho. Co., Inc., New York, N. Y.
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Magill-Weinsheimer Co., Chicago, Ill.
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Regensteiner Corp., Chicago, Ill.
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Schmidt Litho. Co., San Francisco, Cal.
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Stecher-Traung Litho. Corp., Rochester, N. Y., and San Francisco, Cal.
Strobridge Litho. Co., Cincinnati, O.
Stubbs Co., The, Detroit, Mich.
Trautmann, Bailey & Blampey, New York, N. Y.
U. S. Ptg. & Litho. Co., New York, N. Y., Cincinnati, O., and Baltimore, Md.—Insert 298–299
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Walker Litho. & Pub. Co., Boston, Mass.
Weil Sons Litho. Co., David, Brooklyn, N. Y.
Wilmanns Bros. Co., Milwaukee, Wis.

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Johnson Automatic Sealer Co., Ltd., Battle Creek, Mich.—240
Jones & Co., Inc., R. A., Cincinnati, O.
Morris Packaging Equipment Co., Toledo, O.
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Redington Co., F. B., Chicago, Ill.
Rose Bros. (Gainsborough), Ltd., Gainsborough, England, and New York, N. Y.
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Morris Packaging Equipment Co., Toledo, Ohio
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Peters Machinery Co., Chicago, Ill.—250
Pneumatic Scale Corp., Norfolk Downs, Mass.—272–273
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Rose Bros. (Gainsborough), Ltd., Gainsborough, England, and New York, N. Y.
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MACHINES, CONTAINER SEALING (Wire)

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Goat Machine Co., Inc., The Fred, Brooklyn, N. Y.
Package Machinery Co., Springfield, Mass. —254–255
Potdevin Machine Co., Brooklyn, N. Y.
Rose Bros. (Gainsborough), Ltd., Gainsborough, England, and New York, N. Y.
Smith & Winchester Mfg. Co., South Windham, Conn.
Staude Mfg. Co., E. G., St. Paul, Minn.

MACHINES, PAPER CAN FILLING, SEALING AND CLOSING

Lily Tulip Cup Corp., New York, N. Y.
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Staude Mfg. Co., E. G., St. Paul, Minn.

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Beck Machine Co., Chas., Philadelphia, Pa.
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Everett Machine Co., New York, N. Y.
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MACHINES, ROLL SLITTERS AND REWINDERS

Beck Machine Co., Chas., Philadelphia, Pa.
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Meisel Press Mfg. Co., Boston, Mass.
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Rose Bros. (Gainsborough), Ltd., Gainsborough, England and New York, N. Y.

MACHINES, SEMI-LIQUID FILLING

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Filler Machine Co., Inc., Philadelphia, Pa.—266
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Saranac Automatic Machine Corp., Benton Harbor, Mich.—277
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Special Production Machines, Inc. (Div. Pneumatic Scale Corp., Ltd.), Norfolk Downs, Mass.—272–273
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Bostitch Sales Co., E. Greenwich, R. I.—224–225

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Holyoke Coated & Printed Paper Co., New York, N. Y.—Insert 218–219
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Nashua Package Sealing Co., Inc., Nashua, N. H.

MACHINES, TEA BALL AUTOMATIC

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Rose Bros. (Gainsborough), Ltd., Gainsborough, England and New York, N. Y.—170–171
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Amsco Packaging Machinery, Inc., New York, N. Y.
Arenco Machine Co., New York, N. Y.—290
Battle Creek Wrapping Machine Co., Battle Creek, Mich.—240
Cartoning Machinery Corp., Newport, R. I.—186
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U. S. Automatic Box Machinery Co., Boston, Mass.—308–309
Wrap Ade Co., Newark, N. J.

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International Paper Box Machine Co., Nashua, N. H.—292
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MACHINES, VACUUM BOTTLE FILLING

Crown Cork & Seal Co., Baltimore, Md.—169
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Horix Mfg. Corp., Pittsburgh, Pa.—280
Kiefer Machine Co., The Karl, Cincinnati, Ohio
Pneumatic Scale Corp., Ltd., Norfolk Downs, Mass.—272–273
U. S. Bottlers Machinery Co., Chicago, Ill.—299

MACHINES, WIRE STAPLING

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MACHINES, WRAPPING (Bread and Cake)

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Amsco Packaging Machinery, Inc., New York, N. Y.
Baker-Perkins Co., Saginaw, Mich.
Battle Creek Wrapping Machine Co., Battle Creek, Mich.—240
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General Molded Products, Inc., Brooklyn, N. Y.
Kurz-Kasch Co., Dayton, O.
Mack Molding Co., Wayne, N. J.

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(Independent Art and Studio Organizations)

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Clarke, Rene, New York, N. Y.
Cole, Clarence, New York, N. Y.
Cooper & Shower, Detroit, Mich.
Dreyfuss, Henry, New York, N. Y.
Dryden, Helen, New York, N Y.
Epstein, Alvin, Baltimore, Md.
Farrell, Harry H., Chicago, Ill.
Furman-Gold Co., The, New York, N. Y.
Haggstrom, Thelander & Berg, Rockford, Ill.
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Heile & Pike, Chicago, Ill.
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Van Doren & Rideout, Toledo, O.
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United Mfg. Co., The, Springfield, Mass.
Walther & Co., Inc., Brooklyn, N. Y.
Whiting Co., Inc., C. R., Hackensack, N. J.
Whiting-Patterson Co., Inc., New York, N. Y.

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American Tissue Mills, Holyoke, Mass.
Bennington Wax Paper Co., Bennington, Vt.—Insert 182
Brown Co., Portland, Me.
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Crystal Tissue Co., The, Middletown, O.
Detroit Wax Paper Co., Detroit, Mich.
Dixie Wax Paper Co., Inc., Dallas, Texas
General Waxed Papers Co., Inc., Chicago, Ill.
Hamersley Mfg. Co., Garfield, N. J.
Henle Wax Paper Mfg. Co., Inc., The, New York, N. Y.
Kalamazoo Vegetable Parchment Co., Kalamazoo, Mich.—184
Kuhmarker Waxed Paper Co., New York, N. Y.
Menasha Products Co., Menasha, Wis.
Nashua Gummed & Coated Paper Co., Nashua, N. H.—174–175
Newark Paraffine & Parchment Paper Co., Newark, N. J.
Ohio Wax Paper Co., Columbus, O.

BUYERS' DIRECTORY of the PACKAGING INDUSTRIES

For information concerning equipment listed below, see catalog pages indicated by numbers appearing after advertisers' listings

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Paterson Parchment Paper Co., Bristol, Pa.
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Ben-Mont Fancy Papers, Inc., Bennington, Vt.—Insert 182
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Bradner Smith & Co., Chicago, Ill.
Brown Co., Portland, Me.
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Chemical Paper Mfg. Co., Holyoke, Mass.
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Kalamazoo Vegetable Parchment Co., Kalamazoo, Mich.—184
Kimberly-Clark Corp., Neenah, Wis.—230–231
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Orono Pulp & Paper Co., New York, N. Y.
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Riegel Paper Corp., New York, N. Y.—Insert 236–237
Robertson Paper Co., Bellows Falls, Vt.
Safepack Mills, Millis, Mass.
Sisalkraft Co., The, Chicago, Ill.
Thilmany Pulp & Paper Co., Kaukauna, Wis.
Union Bag & Paper Corp., New York, N. Y.—252
Westfield River Paper Co., Inc., Russell, Mass.
Weyerhauser Forest Products, St. Paul, Minn.

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Ben-Mont Fancy Papers, Inc., Bennington, Vt.—182
Birge & Sons Co., M. H., Buffalo, N. Y.
Bradner Smith & Co., Chicago, Ill.
Chicago Printed String Co., Chicago, Ill.
Cranmer Co., Harry M., Boston, Mass.
Crystal Tissue Co., The, Middletown, O.
Datz & Son, A. S., Philadelphia, Pa.
Dejonge & Co., Louis, New York, N. Y.—Insert 178–179
Dennison Mfg. Co., Framingham, Mass.—Insert 268–269
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Hazen Paper Co., Holyoke, Mass.—Insert 190–191
Holyoke Coated & Printed Paper Co., New York, N. Y.—Insert 218–219
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Keller-Dorian Paper Co., New York, N. Y.
Kupfer Bros. Co., New York, N. Y.
Marvellum Co., Holyoke, Mass.—Insert 256–257
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McLaurin-Jones Co., Brookfield, Mass.—Insert 302–303
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Paterson Parchment Paper Co., Bristol, Pa.
Racquette River Paper Co., Potsdam, N. Y.
Royal Card & Paper Co., New York, N. Y.—Insert 188–189
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United Mfg. Co., The, Springfield, Mass.
Walther & Co., Inc., Brooklyn, N. Y.
Whiting Co., Inc., C. R., Hackensack, N. J.
Whiting-Patterson Co., Inc., New York, N. Y.
Williams & Co., Inc., Chas. W., New York, N. Y.

PASTES

(See Adhesives)

PRESSES, ALL-SIZE ROTARY

Claybourn Corp., Milwaukee, Wis.
U. P. M. Kidder Press, Dover, N. H.

PRESSES, MULTI-COLOR PRINTING (Cartons, Labels, Wraps)

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Claybourn Corp., Milwaukee, Wis.
Meisel Press Mfg. Co., Boston, Mass.
Rutherford Machinery Co., New York, N. Y.
U. P. M. Kidder Press, Dover, N. H.

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Meisel Press Mfg. Co., Boston, Mass.
Rutherford Machinery Co., New York, N. Y.
U. P. M. Kidder Press, Dover, N. H.

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Milwaukee Printed String Co., Milwaukee, Wis.
National Tinsel Mfg. Co., Manitowoc, Wis.
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Taft Co., R. C., Chicago, Ill.
Thayer Mfg. Co., Norwich, Conn.
Walser Mfg. Co., Inc., Clifton, N. J.
W-E-R Ribbon Corp., New York, N. Y.

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Hastings & Co., Philadelphia, Pa.
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Markem Machine Co., Keene, N. H.
Matthias Paper Corp., Philadelphia, Pa.
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ROLL LEAF STAMPING EQUIPMENT

Griffin, Campbell, Hayes, Walsh, Inc., New York, N. Y.
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International Business Machines Corp., New York, N. Y.
Jacobs Bros. Co., Inc., Brooklyn, N. Y.
Merrick Scale Mfg. Co., Passaic, N. J.
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Mechling Bros. Chemical Co., Camden, N. J.
Philadelphia Quartz Co., Philadelphia, Pa.
Standard Silicate Co., Cincinnati, O.

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Peerless Tube Co., Bloomfield, N. J.
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Bates Mfg. Co., The, Orange, N. J.
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Ideal Stencil Machine Co., Belleville, Ill.
Marsh Stencil Machine Co., Belleville, Ill.
Shaw Co., The E. C., Cincinnati, O.

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International Tag Co., Chicago, Ill.
Little Co., John W., Pawtucket, R. I.
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(See Gummed Tape)

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Chicago Printed String Co., Chicago, Ill.
Dennison Mfg. Co., Framingham, Mass.—Insert 268–269
Milwaukee Printed String Co., Milwaukee, Wis.

TESTERS, PAPER AND BOARD

Cady & Co., E. J., Chicago, Ill.
Foreign Paper Mills, Inc., New York, N. Y.
Perkins & Son, Inc., B. F., Holyoke, Mass.
Thwing Instrument Co., Philadelphia, Pa

TUBES, COLLAPSIBLE (Aluminum, Lead, Tin and Alloys)

Aluminum Co. of America, Pittsburgh, Pa.—164
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New England Collapsible Tube Co., New London, Conn., and Chicago, Ill.
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Pennsylvania Collapsible Tube Co., Williamsport, Pa.
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Sun Tube Corp., Hillside, N. J.—278
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White Metal Mfg. Co., Hoboken, N. J.
Wirz, Inc., A. H., Chester, Pa.—196

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Champion Container Co., Inc., Philadelphia, Pa.
Chicago Paper Tube & Can Co., Chicago, Ill.
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Cleveland Container Co., The, Cleveland, O.—191
Cross Paper Products Corp., New York, N. Y.—198

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For information concerning equipment listed below, see catalog pages indicated by numbers appearing after advertisers' listings

Fibreboard Products, Inc., San Francisco, Cal.
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Improved Mailing Case Co., New York, N. Y.
Indianapolis Paper Container Co., Indianapolis, Ind.
International Mailing Tube & Wrapper Co., Brooklyn, N. Y.
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National Paper Can Co., Milwaukee, Wis.
New York Label & Box Corp., New York, N. Y.
R. C. Can Company, St. Louis, Mo.—256
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Pope & Gray, Inc., New York, N. Y.
Surface Products Co., Inc., Washington, D. C.

VELVETS

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Pennsylvania Glass Products Co., Pittsburgh, Pa.

VIALS, UNBREAKABLE, ODORLESS

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Hy-Sil Mfg. Co., Revere, Mass.
Minnesota Mining & Mfg. Co., St. Paul, Minn.
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WOOD VENEER, GENUINE (SHEETS)

Japan Paper Company, New York, N. Y.

WRAPPERS, BOTTLE (Corrugated)

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Container Corp. of America, Chicago, Ill.
Gair Co., Robert, New York, N. Y.
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Hamersley Mfg. Co., Garfield, N. J.
Hartford City Paper Co., Hartford City, Ind.
Hazen Paper Co., Holyoke, Mass.—Insert 190–191
Henle Wax Paper Mfg. Co., Inc., The, New York, N. Y.
Holyoke Coated & Printed Paper Co., New York, N. Y.—Insert 218–219
Liebs Co., L. A., New York, N. Y.
Lord Baltimore Press, Baltimore, Md.
Menasha Products Co., Menasha, Wis.
Milprint Products Corp., Milwaukee, Wis.
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Paterson Parchment Paper Co., Bristol, Pa.
Pioneer Paper Stock Co., Chicago, Ill.
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WRAPPERS, TRANSPARENT CELLULOSE

See Cellulose, Transparent; Converters and Printers

WRAPPERS, WAXED PAPER AND PARCHMENT

American Tissue Mills, Holyoke, Mass.
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Ohio Wax Paper Co., Columbus, O.
Package Paper Co., Holyoke, Mass.
Paterson Parchment Paper Co., Bristol, Pa.
Rap-In-Wax Paper Co., St. Paul, Minn.
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Robertson Paper Co., Inc., Bellows Falls, Vt.
Shamut Waxed Paper Co., Holliston, Mass.
Traver Corp., Chicago, Ill.
Waterproof Paper & Board Co., Cincinnati, Ohio
West Carrollton Parchment Co., West Carrollton, O.

ACME STEEL COMPANY

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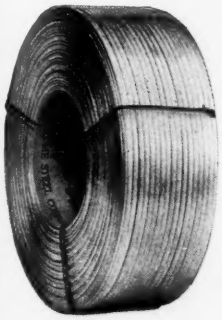
Manufacturers of Galvanized Stitching Wire, Steelstrap and Strapping Equipment, Stainless and Galvanized Steel Conveyor Belts

Doc. *Steelstrap*

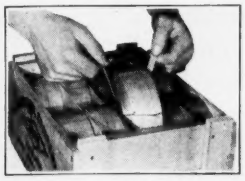
ACME *SilverStitch*

REG U S PAT OFF

STITCHING WIRE FOR FIBRE BOXES



One-Piece
5 and 10-pound coils



Tape makes removal of first coil easy

Stainless stitching with Silverstitch

Silverstitch is the finest on the market—is more widely used than any other. It offers three important advantages:

1. Unvarying accuracy in temper, width and thickness.
2. Continuous length, full weight 5 and 10-lb. coils.
3. Galvanized finish that gives greatest resistance to rust.

Stainless. With galvanized, rust-resisting Silverstitch, boxes remain clean and free from rust stains. Valuable for soap, food, candy boxes, etc. Liners can be eliminated.

For cartons containing acidiferous products, Acme "Blue Label" Silverstitch—a super quality highly rust resisting wire is offered.

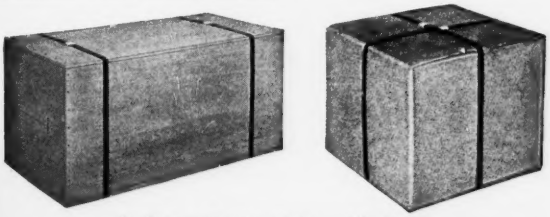
Improved Packing. Silverstitch is now shipped in a new and improved package. The lid on the box is in one piece—is not nailed down, but strapped on, providing new ease of opening when strap is cut. A "lifting tape" removes the first coil from the snugly fitting pack. A fibre dics keeps each coil in shape and prevents tangling.

Silverstitch is preferred in the 10-lb. coil, that cuts coil changing, and machine threading time in half. Acme Silverstitch is made in the following sizes: .103 x .014, .103 x .017, .103 x .020, .103 x .023, .060 x .024, and .060 x .0205.

Send for free 5-lb. coil. Test this superior stitching wire in your plant, without obligation.

Acme Steelstrap PACKAGE REINFORCING

Fast, efficient and economical, Acme Steelstrap provides increased shipping protection for both wood and fibre boxes. The Acme Seal makes the strongest joint ever secured through the use of a mechanical hand sealing machine.



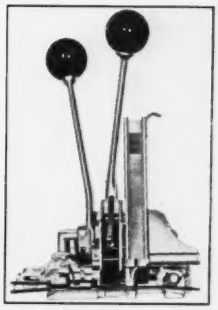
Steelstrap applied to wood box and fibre box

Sealed Joint of Acme Steelstrap

The extra reinforcement, provided with Steelstrap, often permits lighter containers and greater economy in both package and shipping costs.

Bundling Small Packages. In numerous cases, manufacturers economize by using Steelstrap to tie small packages into one unit—gaining a more advantageous express classification. Write today for Doc Steelstrap's new STRAP-BOOK—telling many ways to cure costly shipping ills.

5 Fibre Boxes Bundled with Steelstrap



THE ACME *Steelstrapper*

THE HANDIEST BOX STRAPPING TOOL MADE

For easier, more efficient reinforcing of wood and fibre boxes. The Steelstrapper is a one-unit tool—the only tool with Automatic Seal Feed—100 seals in the magazine. *One, two* . . . and the job is done—faster and better than ever before. Perfectly aligned strap is automatically insured. Write today for new literature describing this finest of all strapping tools.

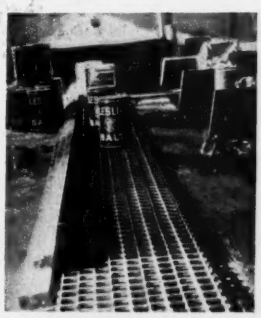
ACME STEEL-MESH CONVEYORS

(In Stainless Steel or Electro-Galvanized Finish)

Acme Steel-Mesh Conveyor Belting is especially adapted for conveying products through drying ovens; for sorting, assembling, washing, and many other manufacturing operations. The open mesh allows free circulation of air, heat, water, and steam. Products may be washed, cooled, sprayed, etc.

Acme Conveyor Belting is economical and is known for its long life under gruelling conditions. Worn sections are easily replaced. It may be lengthened or shortened by a simple operation. Not affected by alternate drying and wetting.

Acme Belting may be obtained in any length, and in widths of approximately 4 to 60 inches in multiples of 2 inches. Write for illustrated data.



Leslie Salt cartons, after labeling, are taken through the dryer on an Acme Steel-Mesh Conveyor Belt. Warm air blown up through the meshes quickly dries the labels before moisture can penetrate the cartons

CHEAPER · · BETTER · · FASTER · !

THE MODERN WEAPON THAT STIFLES PRODUCTION COSTS

STAPLEcraft

"NEWEST OF THE ARTS"

AN EXCLUSIVE ACME ACHIEVEMENT

Here's the weapon you've been waiting for!—"Staplecraft"—newest of the arts. Here's the weapon that knocks all former production costs in a "cocked hat."

Just because you've always sewed, tacked, glued, riveted, gum-taped or otherwise fastened or assembled articles, is no sage assurance that "Staplecraft" will not do it CHEAPER, BETTER and FASTER.

Don't take our word for it—here's how you can make your own test as to time saved. Compute the time now required to do just one of your present operations of fastening or assembling—THEN compare it with the machine gun CLICK-CLICK of the stapling machine. It's just like putting the proverbial "Greased Lightning" to work in your production department.

You have the problem—we fit the machine to your needs. If you have a desire to learn how production costs can be "stifled" in your own business—we have the answer—STAPLECRAFT"—newest of the arts. Send your problems to ACME—you'll get a quick, intelligent response—without obligation.

Get The Facts!

Actual cases of lowered production costs are yours for the asking. Write to-day.

Slice Minutes And Dollars From Carding, Fastening, And Assembling Merchandise And Cartons Via

STAPLEcraft

"NEWEST OF THE ARTS"

ACME STAPLE COMPANY

1641 HADDON AVENUE, CAMDEN N.J.

"A PIG IN A POKE"

You buy a pig in a poke when you purchase without making comparison.

STRONG BOTTOMS are a feature of Amkleer Satchel Bottom Bags. The colored strip in the bottom makes these satchel bottom bags stronger and at the same time powder tight.

We also make flat and square Amkleer Bags and we maintain a complete stock of these lines.

THE AMERICAN PAPER GOODS COMPANY

KENSINGTON, CONN. . . . . CHICAGO, ILL.

SALES OFFICES

NEW YORK · BOSTON · SAN FRANCISCO

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ARABOL ADHESIVES

GLUES, PASTES and GUMS

for all kinds of Packaging Operations

Carton Sealing
Carton Wrapping
Tin Labeling
Glass Labeling
Sealing Shipping Cases
Paper Box Making
Paper Bag Making
Special Adhesive Work

For almost fifty years this organization has supplied packaging adhesives to the leading manufacturers and packers of the country.

Whether your packaging proposition requires labeling, wrapping, sealing or other adhesive operations we have the experience and the facilities for supplying the right glue to suit each specific need. Reliability and Uniformity have always distinguished ARABOL products.

We have perfected a special adhesive for every make of machine on the market which applies glue or paste in the process of packaging. Most of these adhesives have been developed in cooperation with the machine manufacturers and are recommended by them for producing best results with their equipment.

All users of adhesives are invited to avail themselves of the services of our experts. This is offered without obligation. Whether your adhesive requirements are simple or complicated, we will be glad to offer suggestions based upon our adhesive experience of almost 50 years.

THE ARABOL MFG. CO.

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AShland 4-8490

Cable Address
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GREAT BRITAIN,
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and other countries

Established 1885

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Western Factory at Cicero, Ill.

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Philadelphia, Boston
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Largest Adhesive Manufacturers in the World

Bring Your Package Up-to-Date in the Modern Plastic Molded Manner

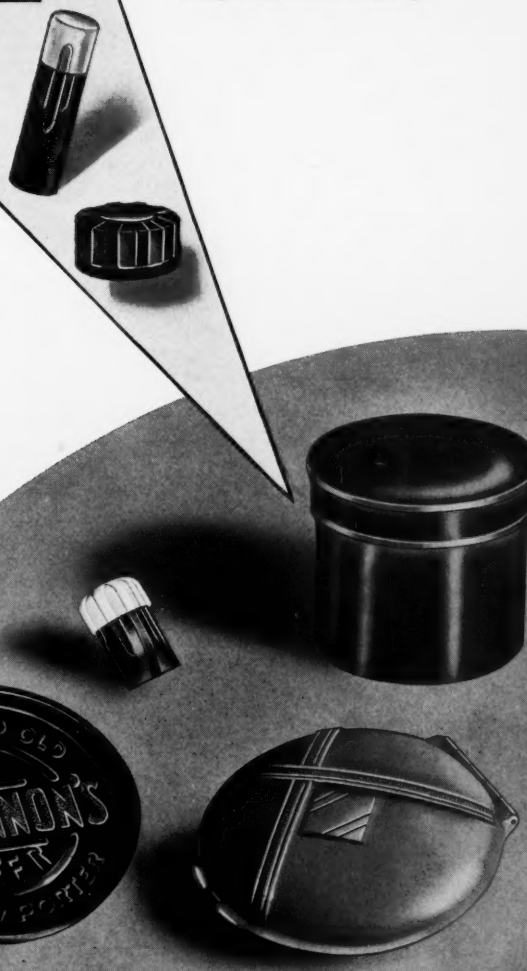
A-R-C

AMERICAN RECORD CORPORATION

SCRANTON FOR 50 YEARS BUTTON BRAND

Precision Molders in All Plastic Materials. Qualified by Experience and Equipment, to Render a Dependable, Efficient and Economical Plastic Molding Service to Satisfy the Most Exacting Requirements. Especially Equipped to Serve the Packaging Field in Creative Design and Custom Molding.

The field of plastic molded re-use packages has scarcely been touched. There are unlimited possibilities in plastic molding. Hardly a product is immune from the necessity of modernizing its container or closure. And there are comparatively few products that cannot make advantageous use of plastic molding, either in the product or in the package, for displays, premiums or accessories. To whatever purpose or product it is applied, A-R-C precision molding invariably results in sales stimulation.



AMERICAN ARC RECORD CORPORATION

Molded Products Division
SCRANTON, PA.

Executive and Sales Offices:
1776 Broadway, New York
Chicago • Detroit • Cleveland
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ARCOLITE • BAKELITE • DUREZ • DURITE • RESINOX • URALITE • BEETLE

PLASKON • UNYTE • ▼ • LACANITE • LUMARITH • TENITE

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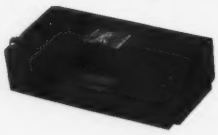
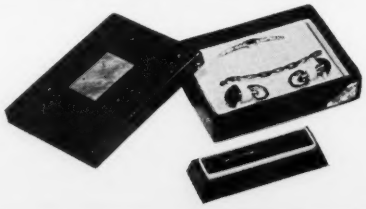
ONCE AGAIN . . . AUBURN AND HICKOK unite to produce an outstanding series of packages.



For the fourth successive year, Hickok has selected Auburn to mold its re-use containers. The judgment of Hickok confirms the superiority of Auburn molding. The foremost molder in packaging . . . as in many other fields . . . continues to be AUBURN! Investigate.



Auburn Button Works Inc.
Auburn, N.Y.

The Auburn Button Works have for many years specialized in custom molding of packages and product-parts.
Our engineering and designing staff is at your service.

XUM

When the Peacock spreads its tail

A remarkable bird is the Peacock—commonplace enough yet transformed in an instant into a thing of scintillating beauty. « » That's our business—to transform the drab, the commonplace, into a sparkling creation. « » How do we do it? By training craftsmen for years until they become artists awaiting your commands. By employing the skill of production that only years can bring.

Here's an example—take this wrapper, place it around any ordinary box—notice the depth of the embossing, the sparkle of the foil, the luster of the color, then see if we need say more of our own product. « » All this sounds expensive—it isn't. LET US TELL YOU MORE FROM THIS POINT ON.

Richard M. Krause, Inc.
52 EAST 19TH STREET, NEW YORK, N. Y.
COLOR PRINTERS—LABELS AND SEALS FOR THIRTY YEARS

NO. 3572 NON-CURLING BLACK FLINT GLAZED PAPER

By Courtesy of
WYOMISSING GLAZED PAPER COMPANY
New York, N. Y. and Reading, Pa.

One of the finest packages of all time

THE SET-UP PAPER BOX

Ask Your BOXMAKER

STOKES & SMITH Co

PAPER BOX MACHINERY — PACKAGING MACHINERY

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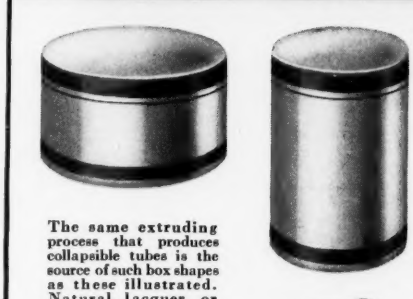
MERCHANDISE
WITH ALUMINUM

FOIL . . . Your package in always-sparkling Aluminum Foil commands attention. People know that they can count on the FRESHNESS of a product that is foil-wrapped. That's because Aluminum Foil shuts out light, heat, air and moisture.

The right foil for you may be thick or less-than-paper-thin; it may be plain or embossed, bond or wax-paper backed; in sheets or continuous rolls. To help you find the way to use the merchandising power of Aluminum Foil, we place all our experience at your service. Address ALUMINUM COMPANY OF AMERICA, 1829 Gulf Bldg., Pittsburgh, Pa.

RE-USE BOXES . . . Consider the fascinating possibilities of merchandising your product in re-use containers of gleaming, silvery Alcoa Aluminum. Examples of many possible shapes are shown at the right.

TUBES of Alcoa Aluminum are strong enough for a clipless closure, and yet are soft and flexible, easy for dainty feminine fingers to squeeze. There is real shipping economy in the lightness of Alcoa Aluminum Tubes. And . . . Alcoa Aluminum Tubes are now more economical to buy.



The same extruding process that produces collapsible tubes is the source of such box shapes as these illustrated. Natural, lacquer, or Alumilite finish.

Uniformly strong, perfect tubes in sizes up to 2½ in. diameter and 11 in. long.

ALCOA · ALUMINUM

FOR BEAUTY
FOR DURABILITY
FOR SAFETY

★

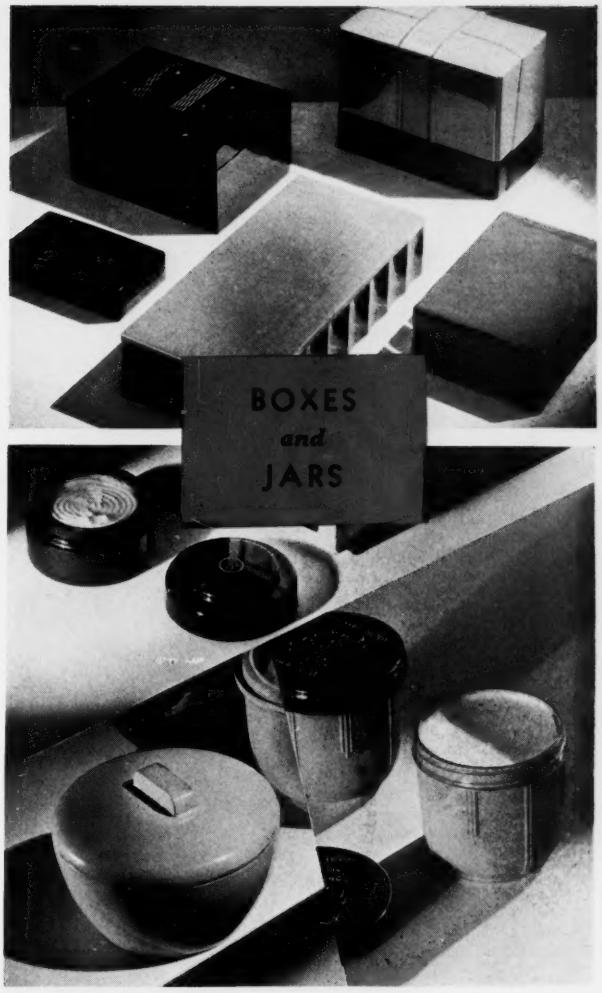
. . . mold it with

DUREZ

That package you're contemplating . . . will it have the smooth, lustrous beauty that *sells?* Will it *keep* that beauty—take the hardest kind of use without denting, scratching or pealing? Will it be absolutely chemically inert to the contents—carry your product to your customer in perfect condition?

It *will*—if it's molded of Durez!

Molded Durez boxes, caps, jars and display stands have what it takes to win consumer acceptance in today's tough markets. Before you select any other packaging or display material, find out how it could be done with Durez. You'll probably discover—as hundreds of other manufacturers have—that Durez will do the job better. For complete information on what has been done with Durez—and what *can* be done—in your particular field, write General Plastics, Inc., 1 Walck Road, North Tonawanda, N. Y.



BOXES The newest, and one of the most successful, forms of packaging. These Durez boxes have been used for silverware, manicure sets, razors, jewelry, dental supplies and many other products.

JARS Cosmetic manufacturers—once tests of Durez assured its non-contaminating qualities—have flocked to molded Durez jars for their creams. Better design and Durez' sleek, beautiful finish have jumped sales.

CAPS There is one outstanding reason for the great increase in the use of Durez caps . . . *people like them*—and what people like, people buy! Whether it's on a drug, cosmetic or liquor bottle—the public answer is the same. Durez caps go on and come off with a mere flick of the fingers, they compliment good package design and they give perfect protection for the contents.

DISPLAY STANDS The molded Durez display stand for Norwich Aspirin jumped sales 38%. Dealers always use Durez stands because they are good looking, solid and don't become dog-eared or worn no matter how long they're out on the counter.

DUREZ *molded* – BOXES – CAPS – JARS – DISPLAYS

WHEN YOUR PROBLEM IS

Call the Nearest Sales Office

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3500 E. Biddle St.
Wolfe 9700

Boston, Mass.
131 State St.
Hubbard 7172

Chicago, Ill.
4622 W. North Ave.
Spaulding 8480

Cincinnati, Ohio
2510 Highland Ave.
Jefferson 2201

Denver, Colo.
241 So. Cherokee St.
Spruce 2663

Detroit, Mich.
1900 E. Jefferson Ave.
Fitzroy 3292

Houston, Texas
105 N. Greenwood St.
Wayside 4163

Jacksonville, Fla.
1801 W. 15th St.
Jacksonville 5-1355

Kansas City, Mo.
Guinotte & Lydia Aves.
Victor 7250

Los Angeles, Calif.
3820 Union Pacific Ave.
Angelus 7111

Memphis, Tenn.
265 W. Trigg Ave.
Memphis 3-4622

New Orleans, La.
521 N. Scott St.
Galvez 4145

New York City, N. Y.
100 E. 42nd St.
Ashland 4-2300

Omaha, Neb.
8th and Dodge Sts.
Omaha 1387

Philadelphia, Pa.
Room 1109
1500 Walnut St.
Pennypacker 1865

St. Louis, Mo.
P. O. Box 1242
Bridge 3550

San Francisco, Calif.
155 Montgomery St.
Garfield 7890

Syracuse, N. Y.
1016 E. Water St.
Syracuse 2-2341

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NEW YORK CHICAGO

Packaging CALL CONTINENTAL

• CONTINENTAL'S representatives, skilled in "packaging to sell," offer the knowledge and experience gained through years of solving the packaging problems of many diversified industries.

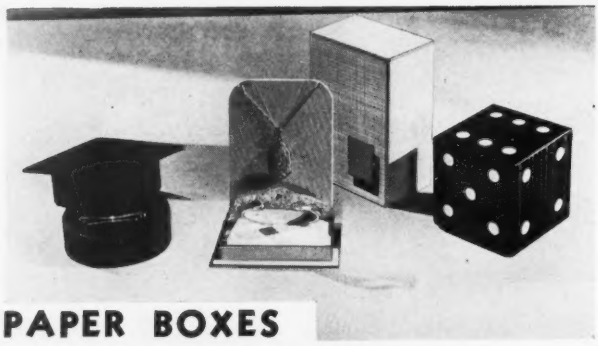
Coupled with their wide knowledge are Continental's large resources—41 plants strategically located from Coast to Coast . . . sales offices in principal cities . . . completely equipped Research and Development Laboratories . . . skilled Design Departments . . . and batteries of modern lithograph equipment, manned by craftsmen and aided by superior printing plates made in Continental's own master engraving plants.

A Continental representative near you gives you ready access to the extensive packaging facilities of the entire Continental organization. Feel free to call on him for help at any time.

"IT'S BETTER PACKED IN TIN"

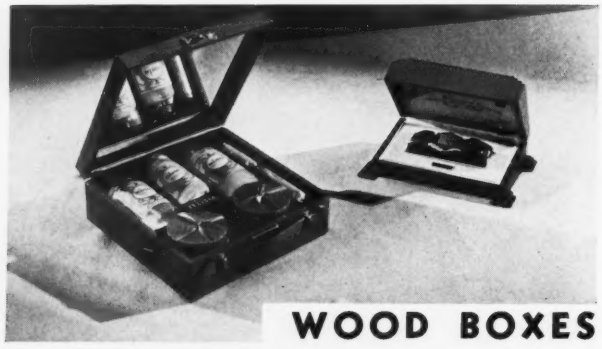
CAN COMPANY

SAN FRANCISCO



PAPER BOXES

Novelty effects—sound merchandising "stunts"—fancy die cut shapes—anything that can be made by hand.



WOOD BOXES

Lacquer, sprayed finishes, or covered with leather, imitation leather, velvet, fancy paper and other novelty materials—for jewelry, perfume and other cosmetic items.

METAL BOXES

Covered with velvet or imitation leather—lined with velvet and satin—chromium bases—ideal for small items or sets.

MERCHANDISE DISPLAYS

Of cardboard—wood—metal—glass—and combinations of these materials—for counter and window display.

ARROW

MANUFACTURING COMPANY • INC

15th & HUDSON STREETS, HOBOKEN, NEW JERSEY

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Wherever you are . . . .

C.C.S. SERVICE *is not Far Away*

When it comes to closures, good service means getting what you want without difficulty or delay.

This is the service C. C. S. gives you.

Large stocks of standard caps are maintained in well distributed branch warehouses. Look at the map!

Investigate C. C. S. Closures and the service that goes with them.

You will find the kind of closure and the service you require.

CROWN CORK AND SEAL COMPANY

World's Largest Makers of Closures for Glass Containers

BALTIMORE, MARYLAND

WAREHOUSE STOCKS AND SALES OFFICES:

Atlanta, Ga. — Boston, Mass. — Brooklyn, N. Y. — Chicago, Ill. — Cincinnati, Ohio — Cleveland, Ohio — Dallas, Texas — Detroit, Mich. — Houston, Texas — Jacksonville, Fla. — Kansas City, Mo. — Memphis, Tenn. — New Orleans, La. — St. Louis, Mo.

Western Division

WESTERN STOPPER COMPANY, Inc.

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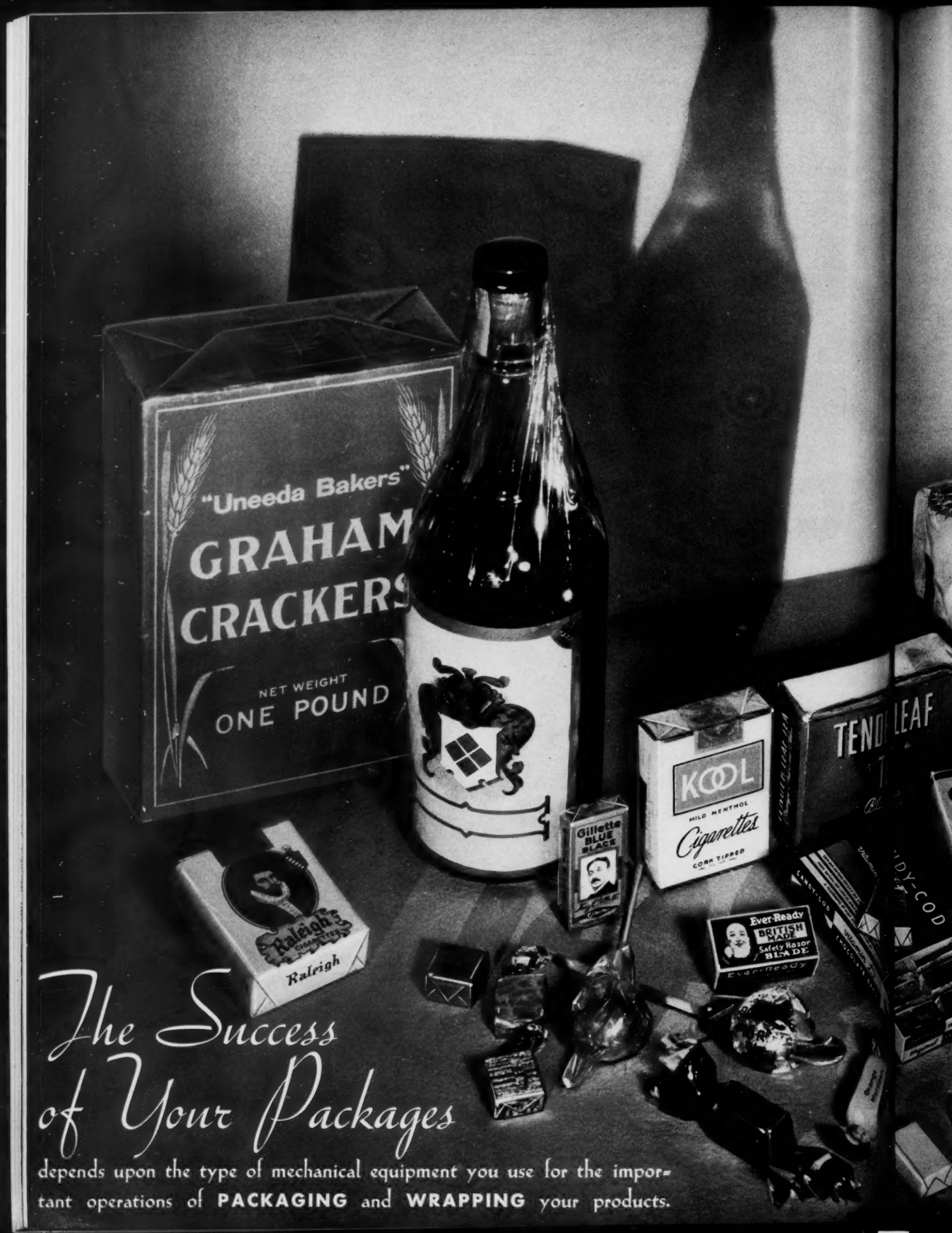
Superior Slip Rubber Ring

An exclusive and patented rubber composition for vacuum sealing, which affords the easiest cap removal of any rubber ring. Samples, information and prices on request.



The Success of Your Packages

depends upon the type of mechanical equipment you use for the important operations of **PACKAGING** and **WRAPPING** your products.

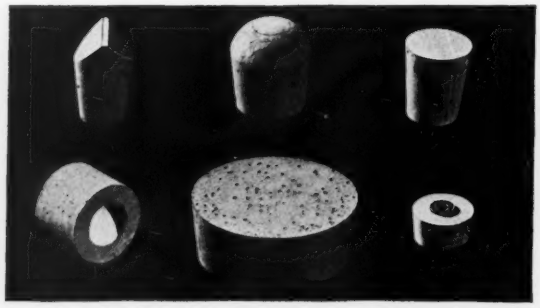
XUM

Our successful experience in designing and building **WRAPPING** and **PACKAGING MACHINERY** for a wide variety of products prompts us to suggest your correspondence and inquiries on the subject.

AMERICAN MACHINE & FOUNDRY COMPANY
511 FIFTH AVENUE, NEW YORK, N. Y.

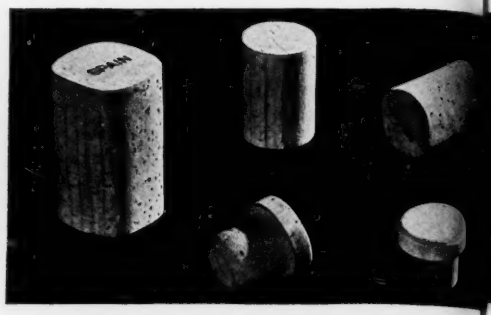
Armstrong's C

A COMPLETE LINE FOR



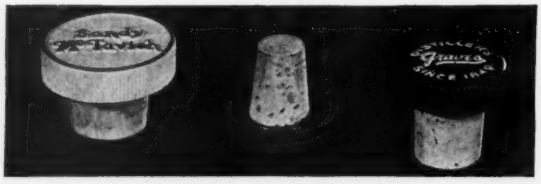
CORKS FOR DRUGS, COSMETICS, ETC.

Armstrong offers all types of corks—tapered corks, shell corks, round-top corks, wedge-top corks, cemented corks, and specie or jar corks. There are a full range of grades and sizes. The effective sealing surface of these corks extends over a wide area inside the bottle neck. Evaporation or leakage rarely occurs in tightly corked bottles.



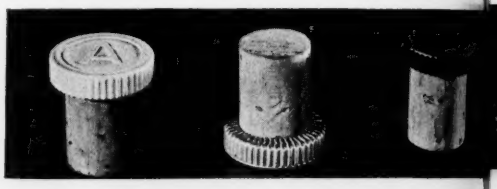
CORKS FOR WINES AND LIQUORS

Choose from the large Armstrong Line of Spani and domestic corks: straight corks, flange cor hand-cut corks, wood-top corks, and champag corks (tirage and expedicion). Armstrong's Cor are honestly and accurately graded to unvary standards of quality. You can rely on them f faithful performance.



EMBOSSED-TOP CORKS

They combine the advantages of a good cork with the beauty and practical merits of a colorful, hardwood top embossed with your name, trade-mark, or other distinctive design. No extra charge for tools on orders of 50,000 or more. The over-hanging skirt keeps the bottle lip clean and sanitary and facilitates removal. Used for sweet wines, whiskey, gin, liqueurs, and food and drug products.



METAL-TOP CORKS

This type of closure is widely used in Europe f sealing liquor. The metal top may be lithographe or embossed in special designs, making a colorfu *private* closure. The metal is clinched over a wooden top having a peg that is sunk deep into the cente of the cork. Removal and resealing is quick an simple. The top *can't* pull off, the peg won't let it The live, resilient cork assures a safe, leak-proof seal.

"CEL-O-SEAL" CAPS AND BANDS

Supplementary seals of cellulose, made by Du Pont and sold by Armstrong, for use on wines, liquors, drugs, food products, etc. Fit over any type of closure. When impregnated with your name or trade-mark, they prevent counterfeiting.

RUBBER STOPPERS

Smooth in texture, uniform in color, and accurate in size and taper. Especially suitable for sealing ammonia, strong alkalies, chlorine bleaches, tincture of iodine, etc.

METAL C
Made in
narrow- an
continuous
ing applicat
decorations
The gracefu
in creating

CROWN C
Used for
fruit juices,
are made
plain or fac
nished pape
specific pro
lithographe
proprietary

Simplified
eliminates
processing
after cap
ordinary c
pressing va
unscrewing

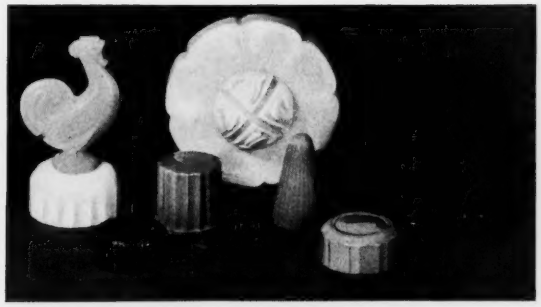
XUM

Closures.....

FOR EVERY PURPOSE

METAL CAPS

Made in single- and double-shell types for both narrow- and wide-mouth ware. Their smooth, continuous threads are accurately formed, facilitating application and removal. Plain colors or private decorations. Made of sturdy tin plate or aluminum. The graceful double-shell caps are especially helpful in creating the impression of quality.

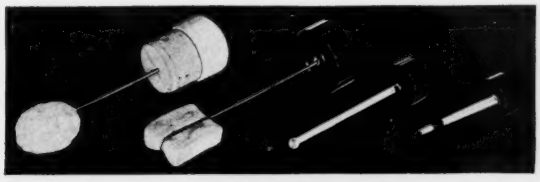


MOLDED PLASTIC CAPS

Armstrong's Artmold Caps give packages that "finishing touch." In addition to beauty, color, and shapely lines, they possess many practical merits. They are sturdy, readily applied by machine or by hand, do not rust or corrode, are easy to remove and replace. Made in a large assortment of standard designs. Also custom-molded in your own design.

CROWN CAPS

Used for sealing beer, carbonated beverages, fruit juices, and other food products. Discs or liners are made of resilient, high quality cork—either plain or faced with tin foil, aluminum foil, or varnished paper, depending on the requirements of the specific product. Shells are carefully shaped, and lithographed clearly in rich colors. Made in stock, proprietary, and private designs.



APPLICATOR CAPS

Supplied with glass rods; quill brushes; twisted-wire brushes; metal handle brushes; cotton, felt, and wool applicators on wire; sponge rubber applicators on glass rods; and dropper attachments. All these are available in combination with molded caps and, in some cases, with corks and rubber stoppers. A safe seal as well as a convenient means of applying nail polish, nose drops, shoe polish, etc.

VACU-VENT CAPS FOR VACUUM PACKING

A new vastly superior closure for food packers. Simplified valve and diaphragm arrangement eliminates use of pressure retorts for sterilizing or processing and permits high vacuum to be drawn after cap has been placed in sealed position with ordinary capping equipment. Easily opened by depressing valve with pointed object to admit air before unscrewing. Makes a perfect reseal for consumer.

LINERS FOR CAPS

All types, sizes, and thicknesses are offered, including cork, felt, pulpboard, rubber, and special compositions. When necessary they are faced with various types of paper or metal foil to resist chemical action. Before choosing a liner, submit samples of your product to Armstrong's laboratories, where the proper kind will be determined by actual tests.

FOR SAMPLES AND PRICES WRITE ARMSTRONG CORK PRODUCTS COMPANY CLOSURE DIVISION 910 ARCH STREET LANCASTER, PA.

CAPS

the name of - - - -

BUEDINGEN
has meant QUALITY

Age is a rarity in the highly competitive box-making business. Firms come and go. . . and only a few come through the years with a reputation of high quality . . . in design, in workmanship and in their relations with their customers.

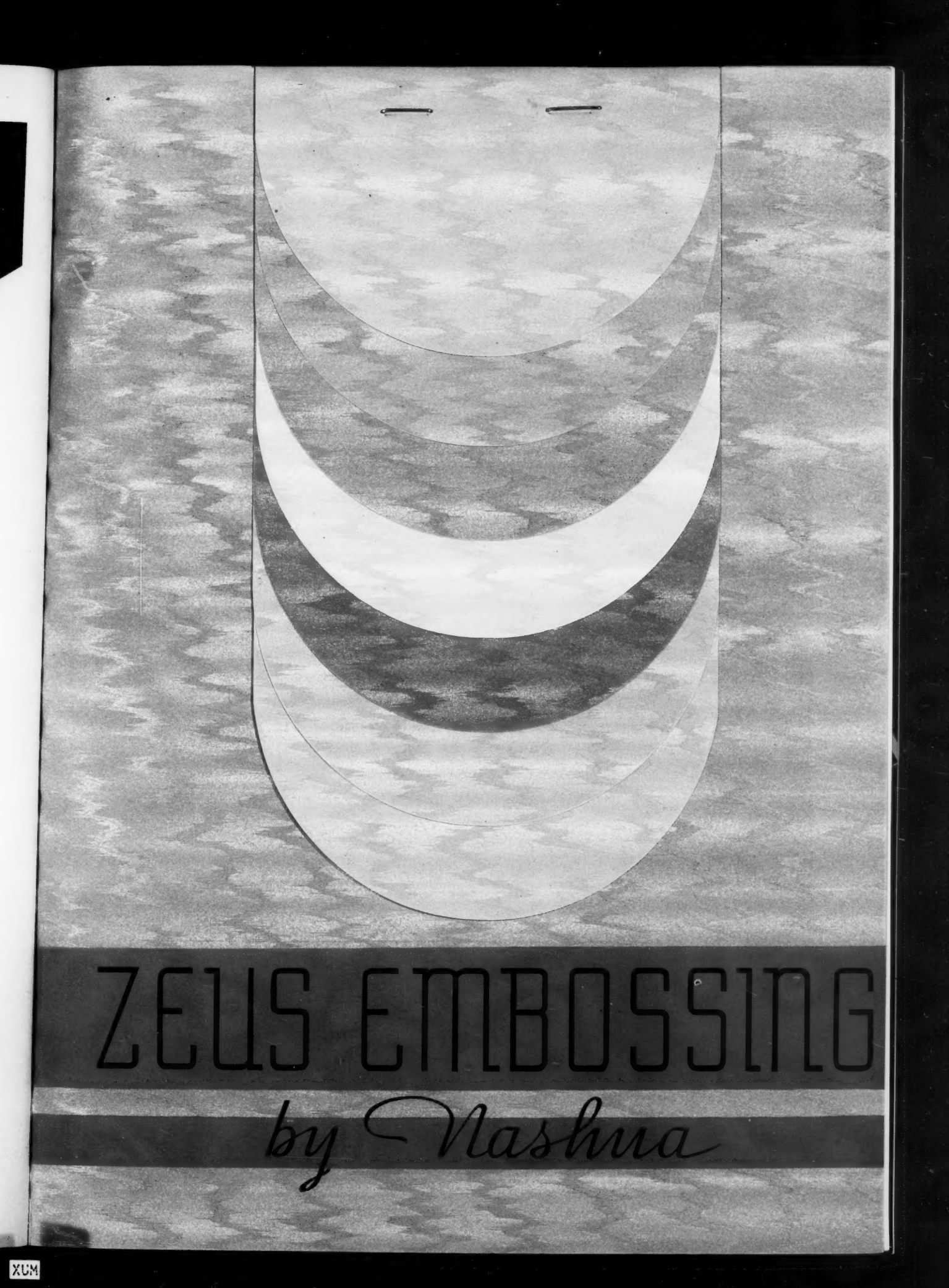
Such a firm is the house of Ferdinand Buedingen . . . a house which has built up its clientele through years of service until today it numbers among its customers many of the foremost factors in American industry.

If you want your package to equal, in design and in quality the standards you set for your product . . . we invite the opportunity to discuss your box-making requirements with you. The services of our Designing Department will gladly be placed at your disposal. Write to—

FERDINAND BUEDINGEN COMPANY

INCORPORATED

ROCHESTER, N. Y.


ZEUS EMBOSSING
by Nashua

ZEUS

is a new embossing that splendidly emphasizes sheen and brilliancy..a most alluring effect.

●

The large or back sheet is
No. 1143 — Lavender

The swatches from top down:

No. 1140 — Mother's Day Pink
No. 1144 — Grey
No. 1141 — Green
No. 1148 — Peach
No. 1145 — Blue
No. 1146 — Tan
No. 1142 — Pink

STANDARD ROLL WIDTH 26 INCHES

NASHUA GUMMED & COATED PAPER CO.
NASHUA, NEW HAMPSHIRE

●

WHY WILLIAMSON GLUES ARE UNIFORM IN QUALITY

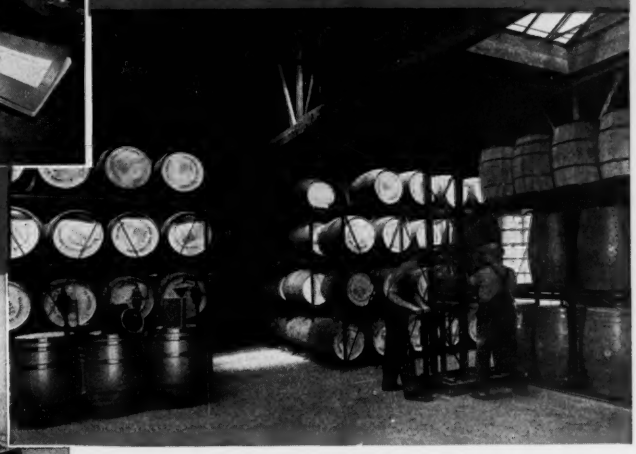
Proven formulas and controlled production help to maintain the Williamson standard of uniformity in a complete line of Cold Odorless Adhesives for carton sealing, bottle labeling, tube winding, tight and loose wrapping—also Adhesives for all transparent cellulose products, including "Cellophane," Sylphrap, Protectoid and Kodapak. Further details given in folder.

"HIGH SPEED GLUES FOR MACHINE OPERATION"

WILLIAMSON GLUE & GUM WORKS
2350 West Eighteenth Street, Chicago, Ill.

DISPLAY CASE OF CUSTOMERS' PRODUCTS. Hundreds of articles sealed and labeled with Williamson Adhesives.

STOCK GLUE SAMPLES AND EXPERIENCE FILE. Showing demonstration jars, and classified envelope record of hundreds of adhesive problems.



A CORNER OF THE LABORATORY. Quality control and constant research contribute to the betterment of products.

BARREL RACKS OF STOCK GLUES READY FOR SHIPMENT.

SHIPPING CONTAINERS, FOR SAFE DELIVERY AND CONVENIENT USE.

Write for your copy of this new folder.

We do not believe there is any substitute for quality

BAKELITE CORPORATION

247 PARK AVENUE, NEW YORK, N. Y.

BAKELITE CORPORATION OF CANADA, LTD., 163 Dufferin St., Toronto, Ontario, Canada

Works at Bound Brook, N. J.; Bloomfield, N. J. Sales Offices at Chicago, Ill.; Cleveland, O.; Hartford, Conn.

BAKELITE

TRADE MARK REG. U. S. PAT. OFF.

Bottles with Bakelite Molded caps for liquor, drugs, cosmetics and foodstuffs

Tubes with caps of Bakelite Molded—one with metal applicator embedded

Facial cream jars with caps of Bakelite Molded

First Aid Kit entirely encased in a box of Bakelite Molded

Bakelite Molded Closures for Bottles, Tubes and Jars

Development of the modern art of packaging demands that a closure serve a double duty. It must thoroughly seal and protect the contents and add to the attractiveness and saleability of the product. Because they meet these needs so admirably, it is easily understood why Bakelite Molded closures have been adopted for so many packaged products.

Bakelite Molded closures are non-corrodible, possess unusual lustre and beauty and are readily formed into exclusive designs. The molded threads are clean, accurate and uniform, and the closures are easily tightened and released.

Bakelite Molded Containers and Dual-use Packages

Bakelite Molded containers are successfully promoting the sale of products of widely different kinds, including cosmetics, candy, safety razors, garters, belts, watches, dental burs, automotive parts, etc.

Many of these containers are designed for dual-use; first, as an attractive package for a product, and then for after-use as a cigarette box, jewel case, ash tray, or other service. Because of its beauty of color and finish, strength and durability, Bakelite Molded is especially well suited for dual-use containers.

Merchandise Displayers of Bakelite Materials

Attractive modern displayers, that invite favorable attention to the products shown, are being made of both Bakelite Molded and Bakelite Laminated. Displayers made of these materials retain their fresh, new appearance indefinitely, and do not become shabby and unsightly.

Bakelite Coating Materials

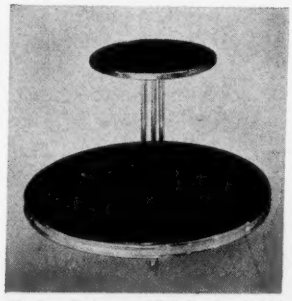
Revolite—a flexible water-proof cloth, coated with Bakelite Resinoid. Available in solid colors, metallic effects, embossed and other designs. For box covers, linings, displays, and decorative purposes.

Send for Information

Write for Booklet T, "Restyling the Container to Increase Sales". Whether your product is packaged in tubes, bottles, jars or boxes, you will find this booklet helpful. Do not hesitate to call on us for information and assistance in adapting Bakelite Materials to any of your products.

Belt and garter dual-use packages made of Bakelite Molded

Counter display of Bakelite Molded for tie clasps



Window displayer of Bakelite Laminated and chromium

Boxes for silverware lined with flexible, moisture-proof Revolite

HILO

THE FINISHING TOUCH

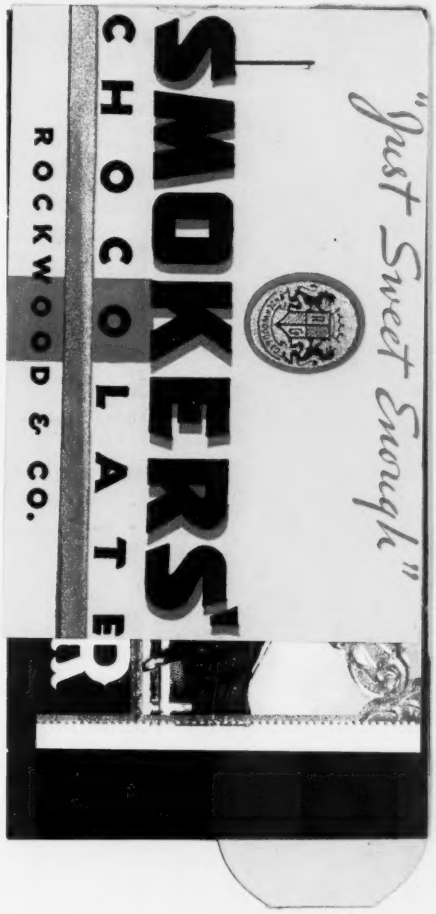
Conceived by Hilo and executed by leading Carton and Label Manufacturers.

A pleasing sheen over all the surface or spot printed where desired—this finish of Hilo Overprint Varnishes enhances the appearance of the package.

These pale, transparent varnishes are applied by printing just as easily as ink. The cost is small. Hilo offers Overprint Varnishes for many kinds of paper label or carton stocks, and suitable for application by Cylinder, Flat Bed, Job or Offset presses.

Hilo Overprinted labels and cartons keep their appearance on the shelves, they do not soil readily and are cleaned off easily.

If your cartons or labels lack the smooth sheen of the Overprinted finish, ask your printer or ask us to send you information and specimens. Or if you prefer we will send a salesman to discuss your needs.



Specimen finished in Hilo Overprint Varnish

Other Hilo Products

- Brass Cap Lacquer
- Coating Enamels
- Sign Varnishes
- Crystallizing -Clear and Colors
- Ink Varnishes Free Flowing

HILO VARNISH CORPORATION

"Seventy Years' Experience"

HILO

42-60 Stewart Avenue BROOKLYN, N. Y.

BRANCHES: CHICAGO Boston Philadelphia

BURT MACHINE COMPANY

BALTIMORE, MARYLAND

CHICAGO · NEW YORK CITY · SAN FRANCISCO · LOS ANGELES

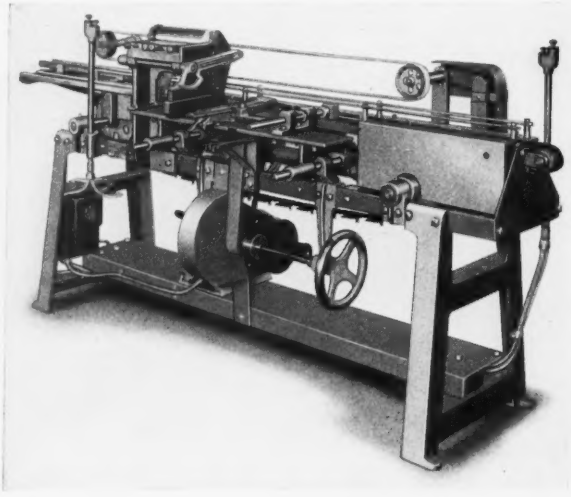
Manufacturers & Designers of Automatic Labeling, Casing & Shipping Container Sealing Machinery

PRODUCTS:
Automatic Labeling, Casing and Sealing Machines.

LABELING MACHINES:
There are several models—one for spot labeling and also applying full length labels to #10 round cans; one for cans with ears and full length labels; one for smaller round containers; one for slip cover cans; and one for applying labels to flat surfaces.

The "A" Models operate at the rate of 200 cans per minute when running at regular speed. Model "A" is for one size of cans, which can also be had for cans of two or more different heights, providing the diameter is the same. The adjustable Model "A" is a multiple diameter type (two or more diameters) suitable also for variable heights and built to order.

MODEL "U": Applies a coating of gum over the entire surface of the container to be covered by the label. Especially adapted for requirements which necessitate a gummed all over labeling job. Eliminates the slow shrinking of label process and preserves the lustre of the label. Operates at a speed of about 100 containers per minute.



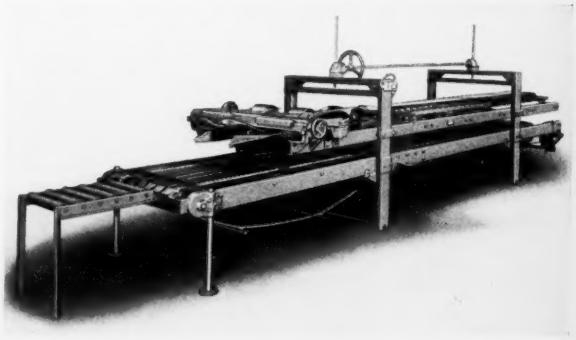
MODEL "E": This is for straight line application of labels to flat surfaces, etc. The adhesive is applied over the whole surface to be covered by the label, the latter is then applied, after which pressure is utilized to effect a complete seal.

The single type model above illustrated operates at a speed of about 60 of the average size containers per minute. A duplex model doubles the speed of the single type, this turning out about 120 per minute. The double type applies both front and back labels in one operation and can be supplied either in the single or duplex style. The Model "E" can be built for two or more size containers within a definite range, this being governed by how large or small the containers are.

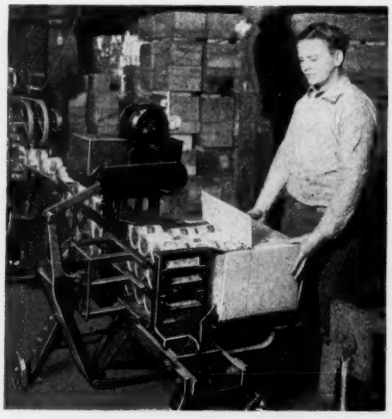
The floor space of the single type is 7′6″ x 3′4″ wide.

Double type: Same length as single—4′4″ wide.

BURT SHIPPING CONTAINER SEALING MACHINE:
Receiving cases from the case packing machine or filled cases from any source, it automatically opens the flaps, applies gum, closes all flaps and applies pressure for sealing, finally delivering case ready for the shipping room. Easily adjustable for the range of cases in general use.



CASING MACHINES:
They assemble the necessary number of packages and then push these into the case. The Model shown, known as the ELECTRO, is for round cans and is 6′10″ long, 2′2″ wide. Other models are for rectangular packages.

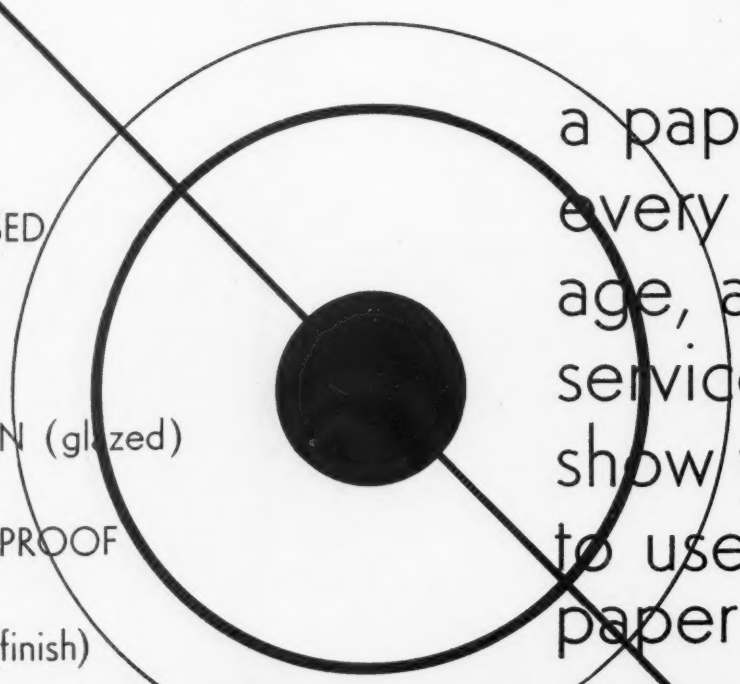


BURT MACHINES generally fit in with other equipment such as Fillers or Cappers and, from this operation on, provide mechanical handling of the individual package and case.

the idea springs from the paper
see
de|onge
the complete line

XUM

See dejonge • the complete line



PAPERS

- PLAIN
- EMBOSSED
- FLINTS
- FRICTION (glazed)
- WATER-PROOF
- SUEDE (finish)
- LEATHERS
- MICAS
- PLATED
- ARTS
- FANCIES
- METALLICS

a paper for every package, and a service to show you how to use that paper •

●LOUIS DEJONGE & CO.

Gentlemen:

☐ Please send us full information about your customer service

☐ We are interested in the following papers

☐ Plain	☐ Water-proof	☐ Plated
☐ Embossed	☐ Leathers	☐ Arts
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That Will Stand TRIAL!

At Point of Purchase! At Point of Consumption!

Slogans? Yes, but important to have winning packages in successful merchandising.

Benco Bag Packages are more than just materials and printing. Samples will show that they have Package Personality with Individual Features which successfully pass the trial at these points.

COFFEE BAGS
FLOUR BAGS

by Betner

GLASSINE AND SPECIALTY BAGS
DIE CUT WINDOW BAGS

BENJ C BETNER CO LINCOLN HIGHWAY DEVON PA

VALUABLE DISCOVERIES

Years ago there lived a jeweler in whom such great faith was placed that one of his clients, who conducted a small restaurant, placed in his custody thirty thousand dollars' worth of jewels to be sold and an investment made with the proceeds. He sold the jewels and died shortly after, but no trace was found of the thirty thousand dollars. Numerous investigations were made but without success. Finally, a young reporter stopped in the town, heard of the quaint restaurant and the lost thirty thousand. He decided it would make a good story, went to the inn, told the old innkeeper his mission and was invited into his living room in the rear. After listening to the story, he looked at the curious old furniture, and some old prints and lithographs that ornamented the walls. Then he stopped in amazement, called to the innkeeper, and pointing to six five thousand dollar U. S. Government bonds, asked why he had placed them there. "They do not look well," replied the innkeeper, "but my friend, the jeweler, gave them to me just before he died and I fastened them there to hide some breaks in the wallpaper." The reporter convinced him that they represented his thirty thousand dollars and the jeweler's name was cleared.

We do not vouch for the truth of the above story, but we do know that valuable discoveries are made unexpectedly. After manufacturing Star Non-Warp Glue in the clumsy, unwieldly cake form of the past hundred years or more, it was brought to our attention the convenience that would result to the operator, and the saving in production time and cost of the glue to the box manufacturer if we produced this glue in small tubular pieces rather than bulky cakes. We tried this tubular glue in several box factories where it was found to be both convenient and economical. As our own costs are cut through this method of production, we are in position to make an attractive price to the trade.

For quality in glues, economy in production, and service of exceptional merit, use Star Adhesives. They are manufactured at the addresses below.

PASTES-GLUES-ADHESIVES-GUMS · ESTABLISHED 1849 ·

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BINGHAM BROTHERS COMPANY

(Founded 1849)

EVERY KIND OF ROLLER AND ADHESIVE

406 Pearl Street - - New York, N. Y.
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TUBES by BOND

THE new tube for your product must be properly designed and properly made to *stand out* in today's highly competitive selling. We welcome such problems.

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Mastercraft papers for general and extraordinary purposes . . . . . inviting special problems

★ The most comprehensive line of WAXED PAPERS in America . . . . .

★ Foremost producers of GIFT WRAPS . . . . .

★ Fancy PAPERS for CANDY WRAPPINGS . . . . .

★ Exceptional BOX COVERS . . . . .

★ SHREDDED papers and cellulose for Easter, or for window displays and richest packing . . . . .

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★ Special coatings on lightweight papers . . . . .

BENNINGTON WAX PAPER CO.
and subsidiary
BEN MONT FANCY PAPERS INC.
BENNINGTON, VERMONT

FOR SMALL AND MEDIUM SIZE TIN CONTAINERS

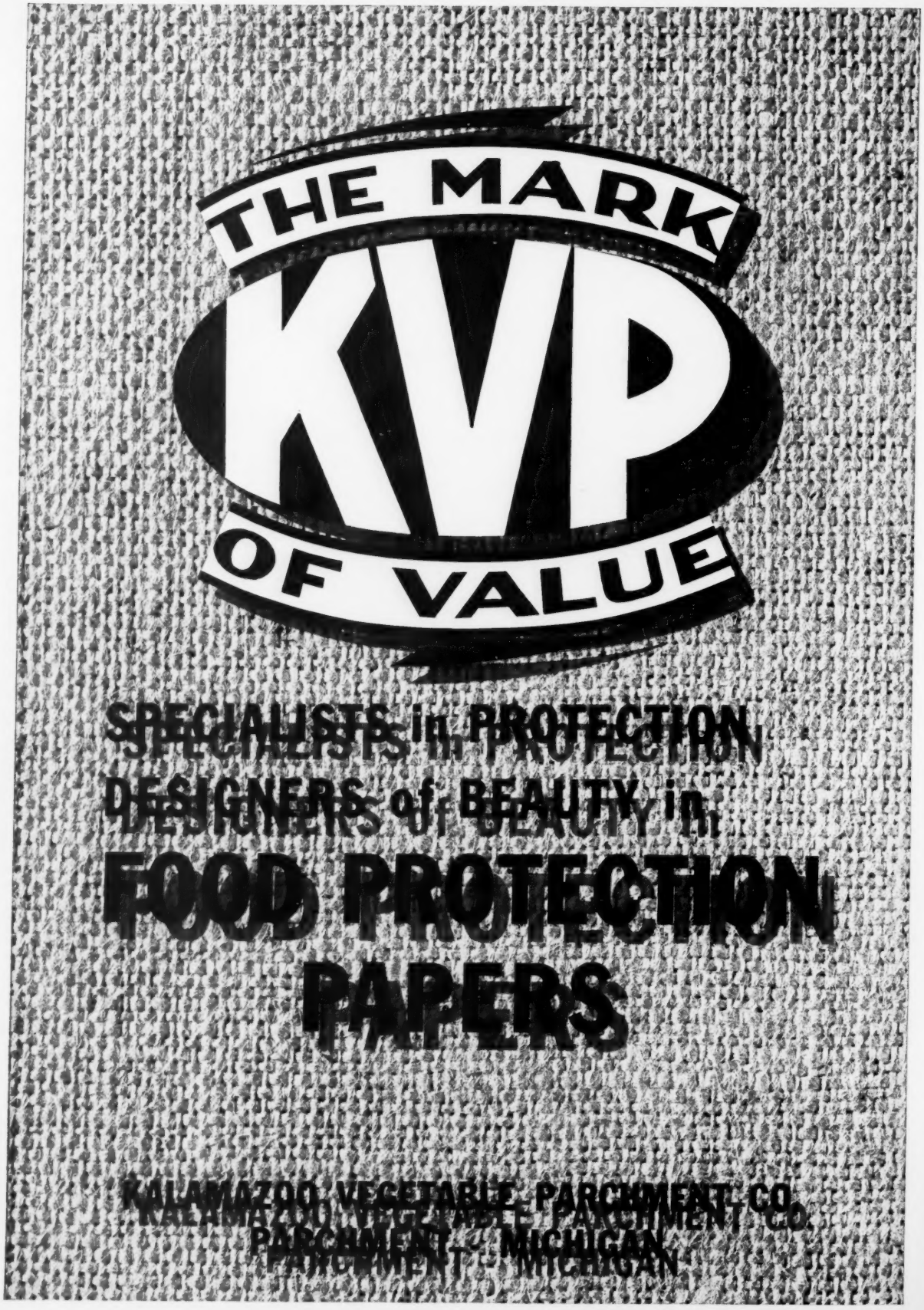
Consult BURDICK

Burdick cans, with their clear lithography and appealing designs, are helping innumerable manufacturers to win consumer preference for their products.

We have complete facilities for the designing and production of small and medium size tin containers. When you turn your container problem over to us, you obtain the personalized service of the entire Burdick organization in following the job through from the origination of the design to the completion of the cans.

We can be of much help to you. May we discuss your requirements?

BURDICK & SON, Inc.
ALBANY, N. Y.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DESIGNERS of BEAUTY in
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KALAMAZOO MICHIGAN

Fent-Onamel

Fent-Onamel

GUMMED LABELS ARE *Distinctly Different!!*

FENT-ONAMEL gummed labels are Distinctly Different from other labels in the same class.

They are made in three colors: Radiant Red, Glistening Green and Royal-Reflex Blue.

The colors have undertone. The iridescent sheen of FENT-ONAMEL radiate luster with every move and turn.

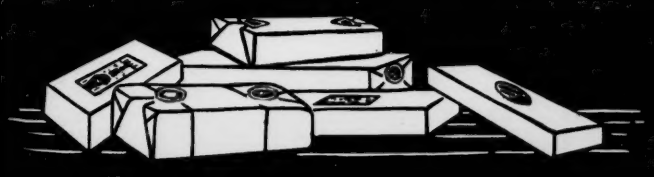
The new FENT-ONAMEL DeLuxe labels are Gold, finished with Steel Blue. The gold is pyralin protected, and will not tarnish nor scratch.

FENT-ONAMEL does not lose its luster; does not rub off nor smear.

The letters are clear, sharp and clean cut.

FENT-ONAMEL will improve the appearance of your package without increasing the cost.

Samples and prices freely submitted.



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It's deliciously different
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AED LABELS

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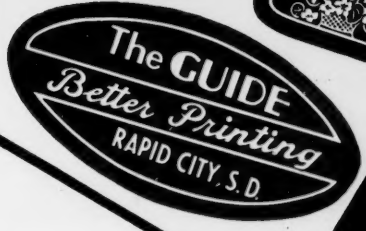
MUCH LESS THAN
ORDINARY KIND.

De Luxe
Labels



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ADDRESSING LABELS

#82-2½ x4" Size

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DIRECT MAIL ASSOCIATES, Inc.

Affiliated with DEAN W. GEER CO.

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To **3000 LOT $9.00**

POSTAGE PREPAID

SEND CHECK WITH ORDER

POSTMASTER: CONTENTS-MERCHANDISE-THIS PARCEL MAY BE OPENED FOR POSTAL INSPECTION IF NECESSARY - - RETURN POSTAGE GUARANTEED

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Made in Red, Blue or Green.

FENTON LABEL COMPANY, INC.

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FOLDING BOXES.... DISPLAYS. TAGS...

Quality, workmanship, creative ability, reasonable price, **all combine to give Campbell the *in* on folding box and tag business.**

Send for our Idea Book of PAPER PRODUCTS for Packaging

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Our Idea Book illustrates a complete line of folding boxes, displays, and tags in every grade and color. There is no charge for the Idea Book. Send for yours TODAY!

Cartoning Machinery Corporation

NEWPORT, RHODE ISLAND

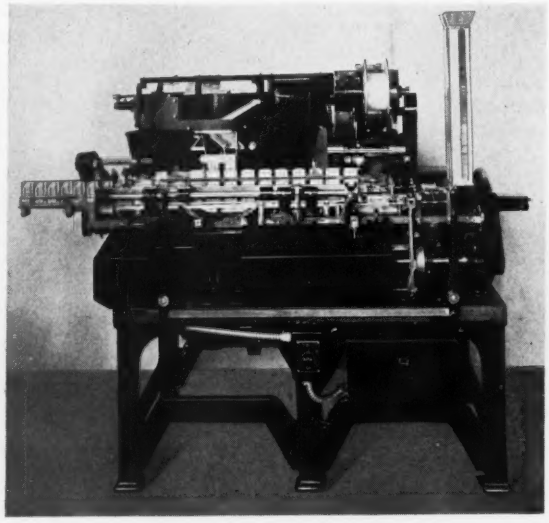
Designers and Builders of Standard and Special Packaging Machinery

Home Office and Plant, Newport, R. I. — **New York Office, 90 West St.**

For thirty-five years our engineers have been designing and building packaging machines that are especially noted for economy in floor space, in low up-keep and in production with minimum waste.

The success of these machines is due to sturdy construction of simple operating units into single purpose machines and of combinations of these units into multi-purpose machines.

Space here permits only an approximate classification of many models. Your inquiries will receive the personal attention of experienced and practical engineers.



Full Automatic Carton Filling Machine

FULL AUTOMATIC CARTON FILLING MACHINES

That open and form the carton, form and insert the liner, fill with a wide variety of products, close the carton by tucking or gluing—briefly classified as follows:

(1) Complete Cartoning Machines with or without a Wax Paper Lining Unit.

(2) Complete Cartoning Machines in combination with an outside Wrapping Unit, for Cellophane, Wax Paper or Glassine.

(3) Complete Cartoning Machines equipped with either Counting or Volumetric Filling Unit.

(4) Combination Wrapping and Cartoning with Circular Inserting Unit.

(5) Combination Carton Forming, Bottom Sealing and Lining Machines.

(6) Combination Carton Forming and Bottom Sealing Machines.

FULL AUTOMATIC BAG FILLING MACHINES

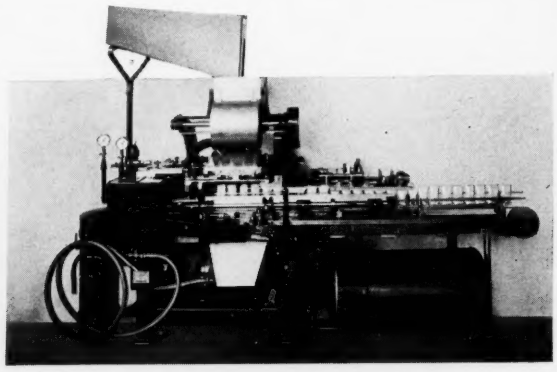
That open, fill, fold and seal bags of a large variety of products. They are adjustable to allow changes in volume to suit changes in price of materials. They handle bags of glassine, or transparent paper in any standard types.

Type B-1—1¼ to 4 oz.—speed 50 to 60 bags per minute.

Type B-5—2 oz. to 8 oz.—speed 40 to 60 bags per minute.

Type B-7—8 oz. to 16 oz.—speed 35 to 50 bags per minute.

Type B-9—Duplex 1¼ oz. to 4 oz.—speed 100 bags per minute.



Full Automatic Bag Filling Machine

FULL AUTOMATIC WRAPPING MACHINES

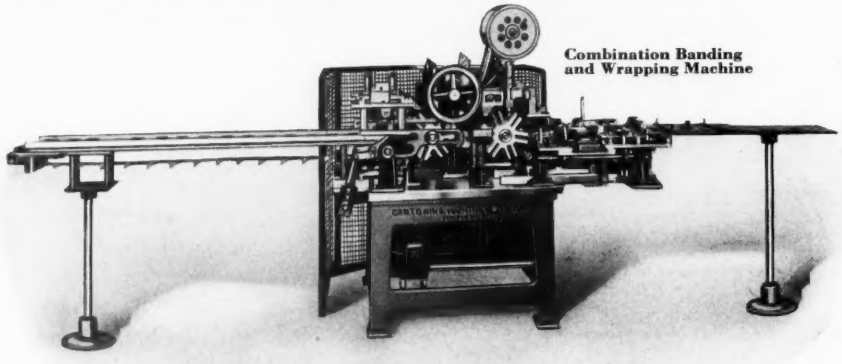
For wrapping items that are regular and irregular in shape with wax paper, glassine, or transparent paper. They may be classified as follows:

(1) Machines that wrap cartons in wax paper, glassine, foil, or transparent papers, either plain or printed.

(2) Machines that wrap the articles themselves in any of the papers mentioned in (1). This wrapping may also be done in combination with cartoning.

(3) Adjustable wrapping machines for regular or irregularly shaped items.

(4) Combination Banding and Cellophane Wrapping Machines, as illustrated.



Combination Banding and Wrapping Machine

LOOK BEYOND THE SEAL . . .

. . . and discover why CAMEO'S work excels!

PAPER stocks are available to all label-makers alike. Printing equipment in most plants today is of a high order. The true test of label service lies in the quality of its engravings.

And there Cameo excels!

For Cameo's engravings are made by our own trained craftsmen, right in our own plant . . . made by men whose years of engraving experience have been devoted exclusively to our type of work, men who follow every job through from first sketch to final lock-up on the press, men whose every instinct is to accept only perfection.

Because such craftsmanship characterizes the Cameo output, hundreds of manufacturers, large and small, avail themselves of Cameo service. Because such craftsmanship is equally important to you, we suggest you investigate our claim. Write to---

CAMEO

DIE CUTTING & ENGRAVING CO.

LABELS AND SEALS

142 WEST 22ND ST., NEW YORK, N. Y.—TELEPHONE WATKINS 9-4904

SAMPLE-BOOK CABINET
MOLDED BY
CHICAGO MOLDED PRODUCTS CORP.
FOR
WESTERN SHADE CLOTH CO.
(BOOK CLOTH DIVISION)

CONTAINERS

Plastic Molded Containers often do more than merely package a product—*they sell it.* Well designed molded containers attract immediate and favorable attention. They bespeak quality and create desire for the product contained, and exert a powerful influence on its sales. You may find a larger and more secure market for your product by Packaging it in Plastics.

DISPLAYS

Plastic Molded Displays of good design find a permanent place on the purchasing agent's desk or on the shop-keeper's counters. They will help you merchandise your product. Making it easy for your prospect to buy is the way to increased sales volume and decreased sales effort. Our merchandising and Design Department is ready to cooperate with you on your display problem.

CHICAGO MOLDED PRODUCTS CORP.

MOLDERS OF
BAKELITE, DUREZ, PLASKON, BEETLE, TENITE
2154 WALNUT ST. CHICAGO, ILL.

Series S-0105
Gold or Silver Print
Colors Stepped as Follows:
WHITE
LIGHT BLUE
BRIGHT GREEN
BRIGHT RED
NEW BLUE
BLACK

XUM

Our decorated box covering papers add sales appeal to packaged goods.

Series S-0105 shown by this swatch, is but one of the many attractive patterns that we make and stock for quick delivery.

We will gladly submit samples and suggestions for proper box coverings. Our sample service is very comprehensive—use it freely.

Royal Card & Paper Co.

Manufacturers of Decorative Papers

ELEVENTH AVENUE AND 25th STREET

NEW YORK, N. Y.

CHAMBON

Automatic Printing & Cutting Machines

To meet the growing need for the controlled production of printing, CHAMBON offers manufacturers a complete line of high speed, automatic, multicolor printing and cutting machines. These machines produce printed wraps, labels, cartons, tags, etc., and deliver them cut-to-size, all in one continuous operation. One leading manufacturer of advertised food products has twenty-two CHAMBON machines in operation at their plant. Other installations of from one to twelve CHAMBON machines are in successful operation throughout the country.

High Speed Production

CHAMBON machines operate at high speeds, producing million quantities of printing at substantial savings over present costs, handling any kind of paper from cellophane or glassine up to 35-point board. They are roll-fed so that all operations are continuous.

Low Operating Cost

CHAMBON Printing Machines are designed to eliminate skill on the part of the operator. Micrometric adjustments are provided.

Interchangeable Printing Units

Operations on a CHAMBON Machine are performed successively in a horizontal line by separate printing units, self contained. Each unit consists of an ink fountain, distribution motion, form rollers, an engraved cylinder, and an impression cylinder. The chrome-plated bronze or steel engraved cylinders are perfectly concentric, eliminating all make-ready and providing for accurate register. Interchangeable feature allows changing over quickly from one job to another.

All Operations in One Assembly

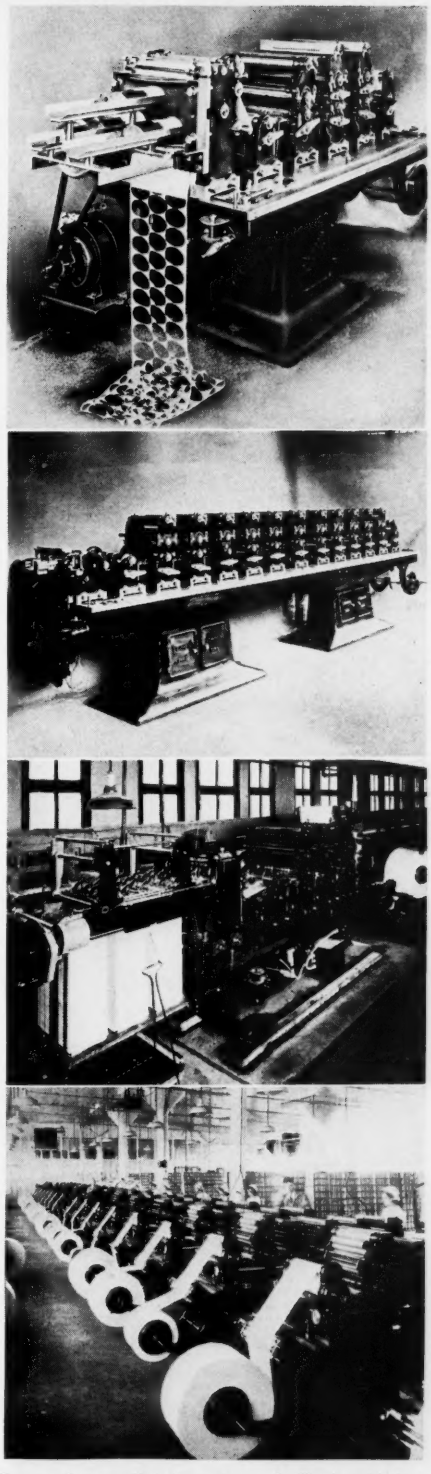
The same CHAMBON machine will print one to five or more colors, using letterpress, dry offset, or gravure or combinations of these methods. In addition the machine can be equipped to perform all supplementary operations such as varnishing, scoring, creasing, embossing, perforating, slitting, sheeting, rewinding, dieing out to shape, etc. The equipment is compact and takes only a fraction of the space required by heavy, bulky equipment.

Choice of Type of Delivery

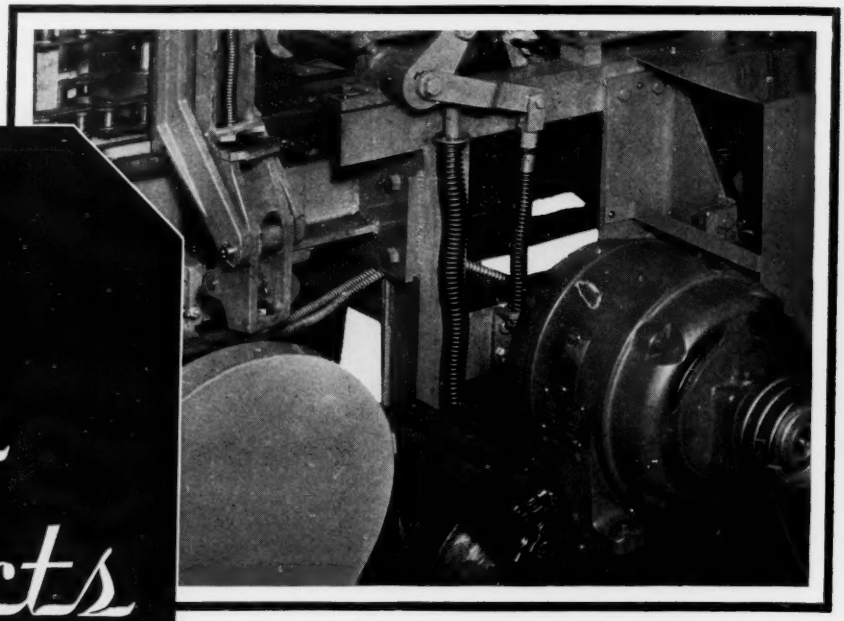
The delivery end of the machine can be fitted with different types of cutting heads such as guillotine, eccentric and rotary, and either horizontal or vertical punching heads. Delivery can be of any type such as elevator, belt, chute, rewind, chain, aeroplane, overhead pile, vertical stacker belt type, combination and elevator, all continuous or in counted packets.

Ask Us to Analyze Your Problem

We invite inquiries from manufacturers using printing in large quantities. We will analyze your problem and submit a detailed proposal covering the cost of a CHAMBON machine designed for your plant. Write **CHAMBON CORPORATION, 917 New York Avenue, Union City, New Jersey.** Our Western office is located at **608 So. Dearborn Street, Chicago.**



Top to bottom, illustrations show: A Chambon Machine which prints and die-cuts multi-color labels, a large Chambon Multi-color Printing Machine, a Chambon Machine for producing labels printed two sides, and an installation of twenty Chambon Label Production Machines in a single plant.



face the facts

A-B-C's of leadership
Taken from our customer files

A—American Sugar Ref., American Stores, Albers Bros. Millg., Allied Products, American Beet Sugar, Avery Salt Co., Amalgamated Sugar, American Cyanimid, Arbuckle Coffee Co., Armour & Co., Armstrong Cork Co., etc., etc.

B—Bristol Myers Co., Bordens, Best Foods, Bayer & Co., Beechnut Packing Co., Boots Ltd., Burma Vita, Burroughs Bros., Barton Salt, etc., etc.

C—Commercial Solvents, Colgate Co., California Packing Co., Cheesborough Mfg. Co., Continental Distilleries, Cooperative G.L.F., Campana Corp., Corn Products Ref., etc., etc.

ARE YOU GIVING GROUND TO COMPETITION?
ARE YOUR COMPETITORS UNDERSELLING YOU?
ARE COMPETITIVE LINES CROWDING YOU OUT?

. . . . Such things do happen: often in fact—and too frequently can be traced directly to obsolete production and packaging methods:

It is significant that most users of Hoepner and CaPeM equipment occupy dominant positions in their respective fields . . . . Their products have consistently met the never ending challenge of competition.

Our broad experience is available to you without obligation.

---

2 Lines of Dependable—Time Tested—Packaging Equipment

HOEPNER
CaPeM

Automatic Scales
" Measuring Devices
" Bag Closing Equipment

Automatic Screw Capping Machines
" Slip Cover Applicators
" Closure Equipment of every description.

Mfd. & Sold by

Consolidated Packaging Machinery Corp.

1400 West Avenue Buffalo, N. Y.

PLAID - SHEEN

HAZEN

HOLYOKE

Cleveland

takes the ordinary spiral-wound .... fibre cylinder ....

Adds Sales Appeal, Beauty and Economy ....

THE RESULT— A Perfect Package!

Cleveland Containers offer an ideal solution to the manufacturer who must package *at low cost* yet without sacrifice of sturdiness or sales appeal. They are strong, durable and—most important—exceedingly attractive. They may be had with sifter tops, pouring spouts, telescope tops or friction plugs, in sizes or types to suit every need. Note their unusual possibilities for convenience and beauty .... sales appeal and display value, as illustrated in the few boxes here shown.

Our packaging engineers have often helped customers to achieve greater display and sales values at lower cost. Their service is yours for the asking. Write or wire our nearest representative.

The CLEVELAND CONTAINER CO.

10421 BEREA ROAD, CLEVELAND, OHIO

Plants: Cleveland • Detroit • New York • Philadelphia • Plymouth, Wis.

Sales Offices: Pittsburgh • Rochester • Chicago

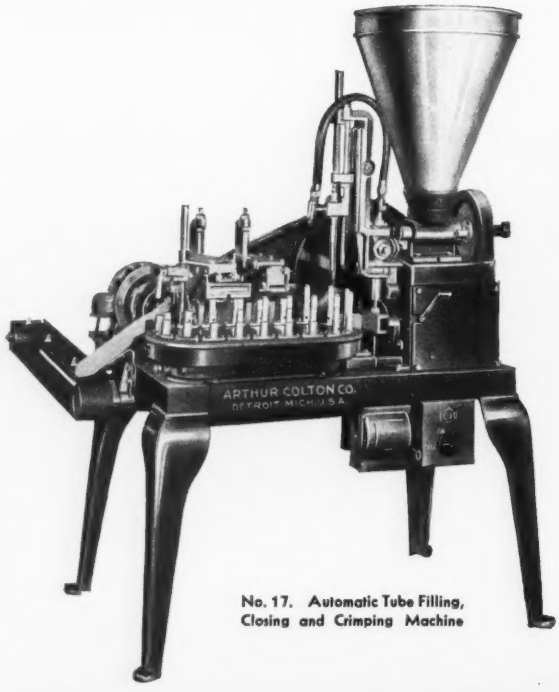
COLTON DESIGNERS AND BUILDERS OF

PILL, TABLET, GLOBULE AND SUPPOSITORY MAKING MACHINES, COLLAPSIBLE TUBE FILLING, CLOSING AND CLIPPING MACHINERY, CIGAR BANDING AND WRAPPING MACHINERY . . . TABLET AND PILL COUNTING AND BOXING MACHINERY, CAN, JAR AND BOTTLE FILLING MACHINES—TUBE CLIPS, CANDY MINT WRAPPING AND LABELING MACHINES . . . SPECIAL MACHINERY TO ORDER

THE COLTON CLOSURE: A new method of sealing a collapsible tube, eliminating the clip entirely and giving a more decorative appearance with greater security to the contents. It is completely formed on these new Colton Tube Fillers and Closers by making the two usual double folds, making a third fold in the reverse direction, and then securing and giving more rigidity to the folds by corrugating the folded end. Both sides of the tube have exactly the same appearance on the folded end. Adoption of the Colton Closure is an investment which pays you dividends immediately, through saving in time, labor and material. No more clips to buy. No clip stock to carry. No clip wastage. No clip corrosion. No stops to replenish clip rolls. No maintenance expense on automatic clipping heads. Continuous production. Reduced overhead. Better appearance. Added security to the tube contents.

WE offer a complete line of automatic power-operated machines for producing the Colton Closure at speeds from 40 to 120 tubes per minute.

No. 17—Automatic Machine handles tubes up to 1½" x 7". It will fill materials in semi-fluid and paste form cleanly, uniformly, and no wiping of the tubes is required. After filling, the tubes automatically pass to the folding and crimping jaws where the closure is completed. The tubes are then automatically ejected onto the conveyor shown. The conveyor is adjustable to suit the height of finishing tables or cartoning machine feeds.



No. 17. Automatic Tube Filling, Closing and Crimping Machine

The machine is easily adjustable from one size tube to another by changing tube holders, nozzle, etc., to suit tube diameter and length.

This machine is furnished complete with motor equipment.

No. 18—Automatic Closer and Crimper—Same as No. 17 but without filling unit. This machine is recommended where frequent change from one material to another is necessary. Tubes can be filled on separate fillers and the Colton Closure completed on this machine.

No. 19—Automatic—same as No. 17 except that a filling unit suitable for fluids is furnished.

No. 7—Automatic—A larger machine than No. 17, handling 50 to 60 tubes per minute, filling, folding and crimping two at a time.

No. 16—Automatic—For large production only. Fills, folds, crimps and ejects four tubes at a time. Capacity from 75 to 120 tubes per minute.

SPECIFICATIONS:

Capacity per minute	40-50 tubes
Power required	¾ H. P.
Floor space	52 in. x 32 in.
Net weight	(Approx.) 1270 lbs.
Gross weight	(Approx.) 1480 lbs.
Boxed for export	(Approx.) 50 x 36 x 60 in.

We are the largest makers of Pharmaceutical Machinery and Tube Filling and Closing Equipment in the world. Our line embraces over two hundred machines designed to facilitate the making and packing of practically all medicinal products and toilet goods. We also design and build all kinds of special purpose machines.

Write for Catalog "P."

COLTON DETROIT ARTHUR COLTON COMPANY
DETROIT MICHIGAN

PRINTED LABELS

LET us emphasize this point—"*The Label Helps Sell Your Merchandise.*" This is the creed of our business.

More often than not, the label is the first point of contact your customer—or prospective customer—has with your company and its products. The label can and should create an identifying impression.

Proper labelling is becoming more and more important in the scheme of intelligent merchandising. Well-designed, modern *Printed Labels* bespeak the quality in your container. Only through the use of *Printed Labels* can you obtain the strong, vivid coloring and accuracy of detail so essential to the modern package.

A half century of successful contact with America's foremost manufacturers, and a keen sense of merchandising values, is behind every recommendation that we make.

Feel free to call on us for suggestions regarding new designs for coming products—modernizing existing labels and wrappers, or quotations on your present requirements. You might also advantageously use our exclusive *Kittlaco* process of coating, which intensifies colors, adds lustre—plus moisture proofing. (This sheet is *Kittlaco* coated.)

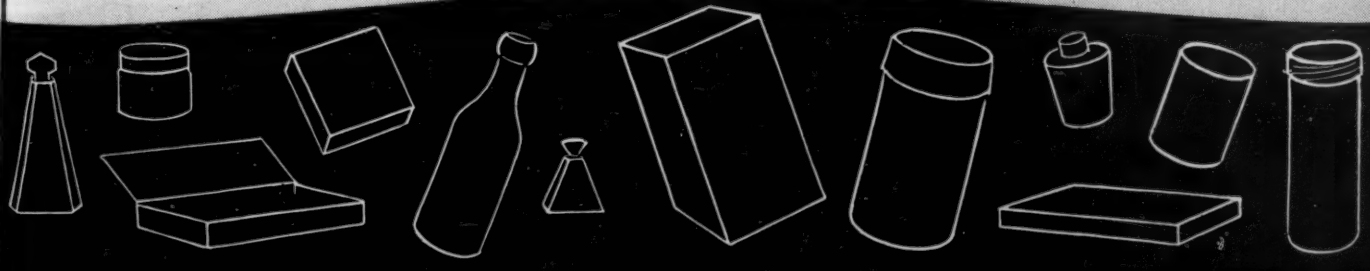
"QUALITY LABELS FOR QUALITY MERCHANDISE"

R. J. Kittredge & Company

Established 1886

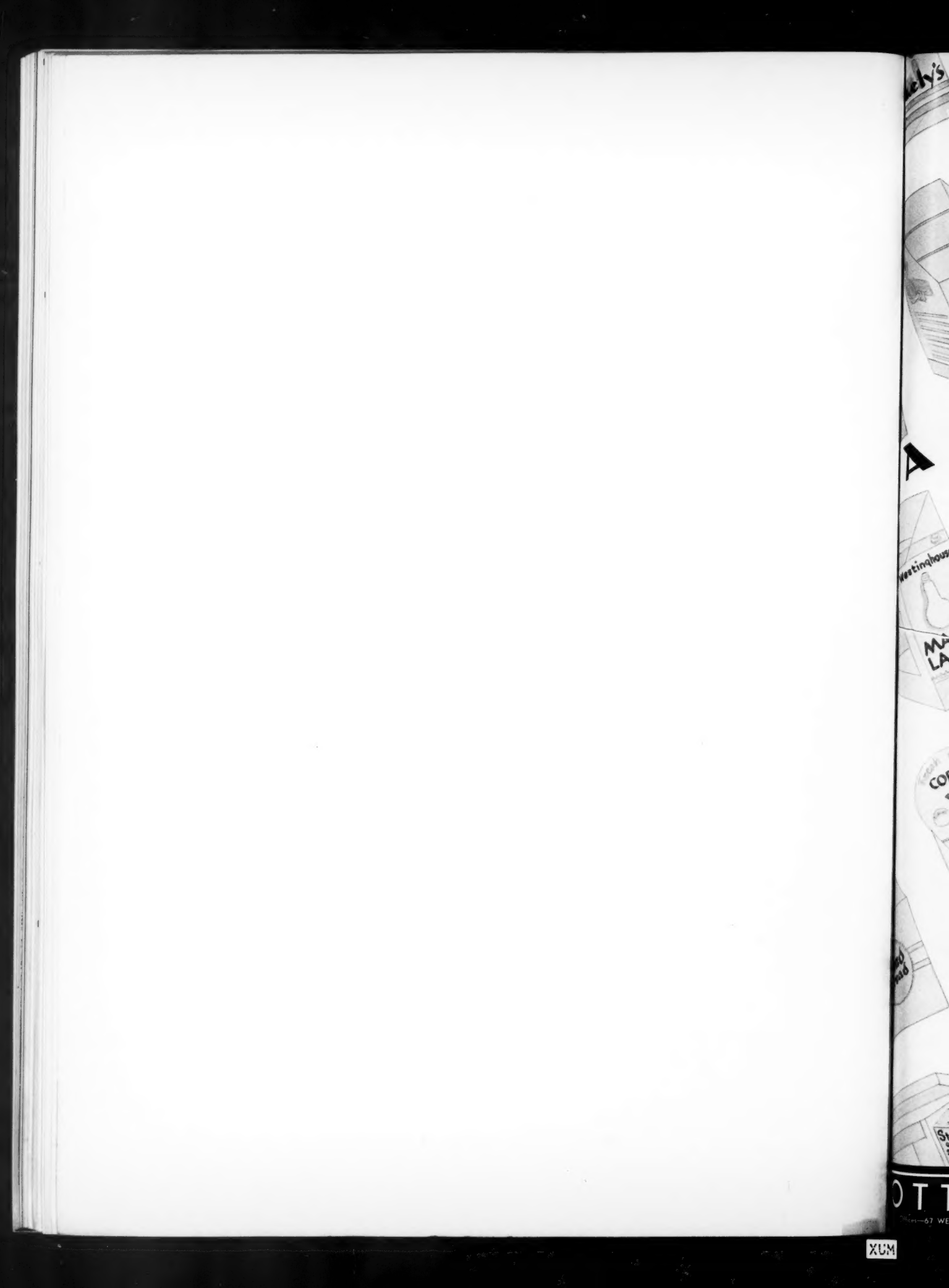
812 West Superior St. **Chicago, Ill.**

Designing • Embossing • Die Cutting • Varnishing • Labels • Wrappers • Box Covers • Spot Varnishing • Box and Carton Printing



THE LABEL *Helps Sell* YOUR MERCHANDISE

XUM



low cost **ORPCO**

CORRUGATED FLOOR DISPLAYS

are doing a National Sales Job

EVERY day countless thousands of ORPCO Displays are selling goods for large and small manufacturers.

WHY NOT GIVE YOUR INDIVIDUAL PACKAGE A CHANCE TO SELL ITSELF?

We have an interesting way of presenting an idea . . . at no cost to you.

Have your package join the ranks! Let us create a floor display stand that will put your product within hands' reach of the consumer.

Phone or write our nearest office.

get in a Sales-punch at the point of Sale

OTTAWA RIVER PAPER COMPANY

Offices—67 WEST 44th STREET, NEW YORK CITY
82 WEST WASHINGTON ST., CHICAGO, ILL.
Main Office and Factory, TOLEDO, OHIO
217 NORTH OXFORD ST., HARTFORD, CONN.
701 NORTH EUTAW ST., BALTIMORE, MD.
1343 ARCH STREET, PHILADELPHIA, PA.

XUM

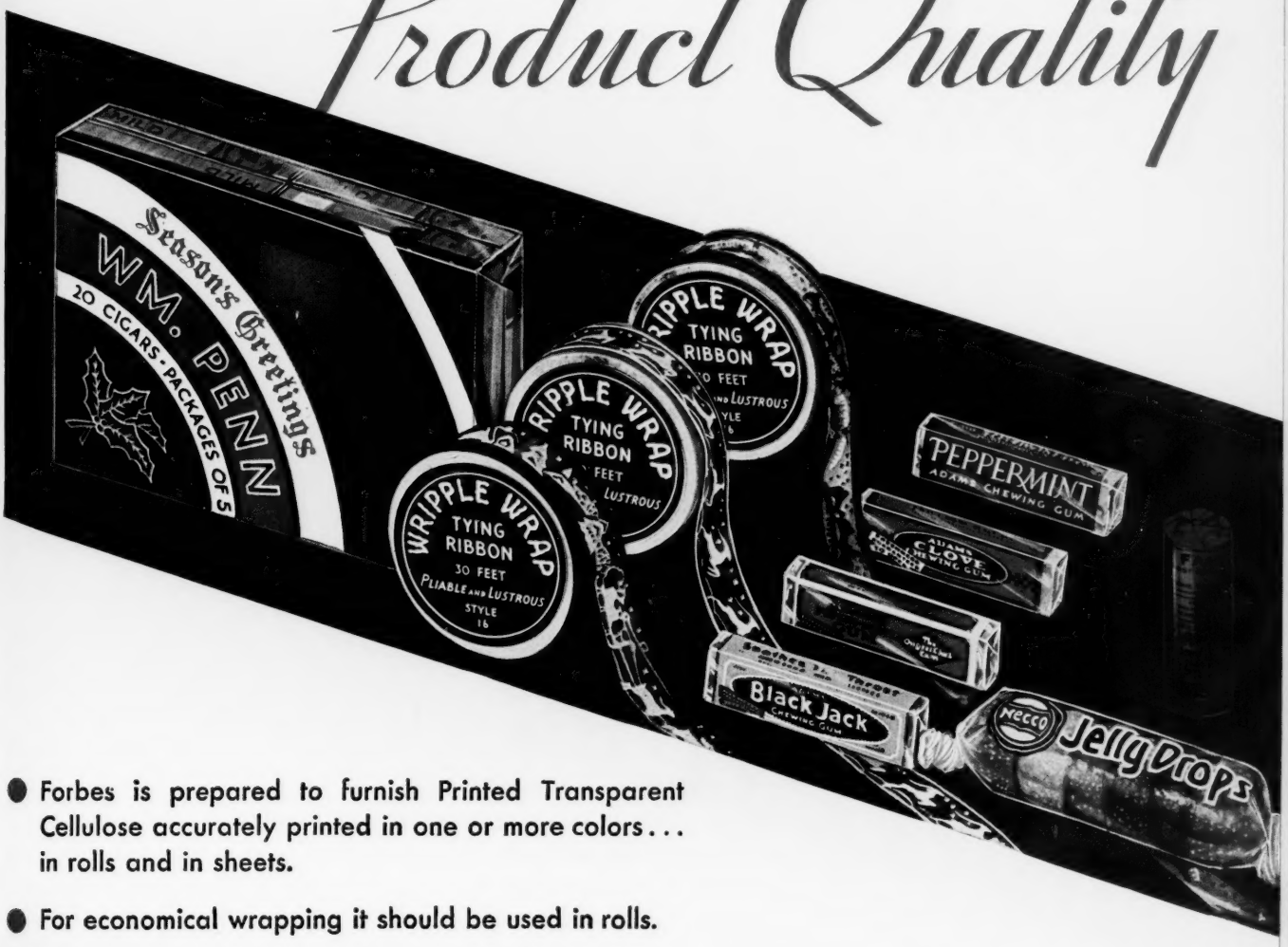
- Mr. and Mrs. Consumer . . . careful and exacting shoppers, indeed !!
  They have learned to appreciate quality of product by SEEING the product in an attractive printed transparent wrapping . . . they are demanding the sanitary protection and retention of quality afforded by Transparent Cellulose.
  YOUR PRODUCTS . . . wrapped in Printed Transparent Cellulose . . . with all the accruing advantages . . . ATTRACTIVENESS, VISIBILITY, ECONOMY and PROTECTION . . . will be given the chance to compete for consumer attention and approval in this new buyer's market.

WRAP YOUR PRODUCT IN

FORBES

PRINTED TRANSPARENT CELLULOSE

Let them see Product Quality



- Forbes is prepared to furnish Printed Transparent Cellulose accurately printed in one or more colors . . . in rolls and in sheets.
- For economical wrapping it should be used in rolls.
- FORBES PRINTED TRANSPARENT CELLULOSE in rolls, accurately wound and trimmed, is meeting satisfactorily the exacting requirements of automatic packaging.

FORBES LITHOGRAPH CO

P.O. BOX 513 · BOSTON

NEW YORK PHILADELPHIA ROCHESTER CHICAGO CLEVELAND DETROIT

XUM

The PALMOLIVE GIANTS BRUSH *and* BRUSHLESS

It was our privilege to work with Colgate-Palmolive-Peet Company in getting their new giant tube design ready for market.

If your product needs a new market dress, or if you have a new product which has as yet no market dress, let our Design and Manufacturing departments collaborate with you. Our experience covers creams, pastes, semi-liquids, powdered and granular products.

A. H. WIRZ, INC.

Established 1836

Collapsible Metal Tubes Metal Sprinkler Tops

CHESTER, PA.

NEW YORK, N. Y., 30 East 42nd St. CHICAGO, ILL., 80 E. Jackson Blvd.

LOS ANGELES, CAL., 1231 East Seventh St.

HAVANA, CUBA, Roberto Ortiz Planos, O'Reilly 49, Dept. 209

Clearpack to Triple-walled

WHETHER BAG, WRAP OR ENVELOPE

LET CONTINENTAL CREATE IT

Since the day Continental brought forth the first Specialty Bag, it has persistently foreseen and answered consumer demand.

Today, thirty-six years later, Continental represents the highest standard of creation and manufacture founded upon an outstanding record of accomplishment.

These products of able designers and competent mill men are brought to you by men trained in the study and solution of your packaging problems.

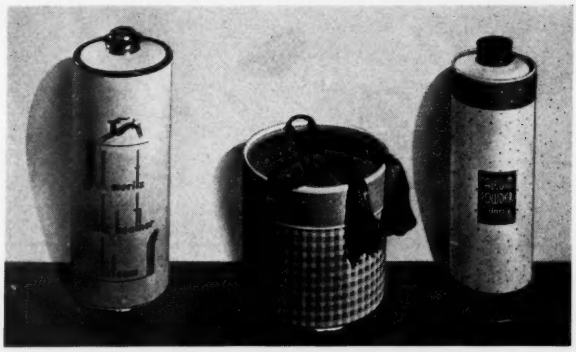
CONTINENTAL PAPER & BAG CORP.

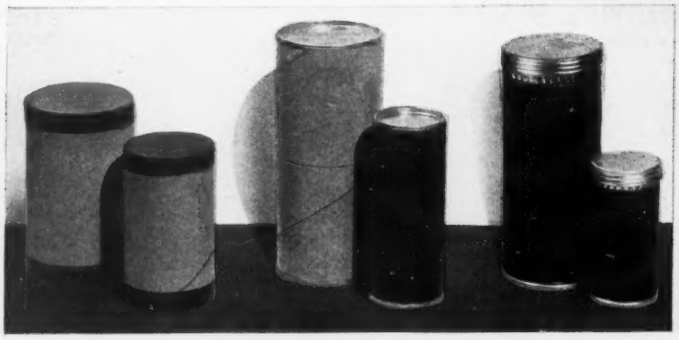
A Division of INTERNATIONAL PAPER COMPANY

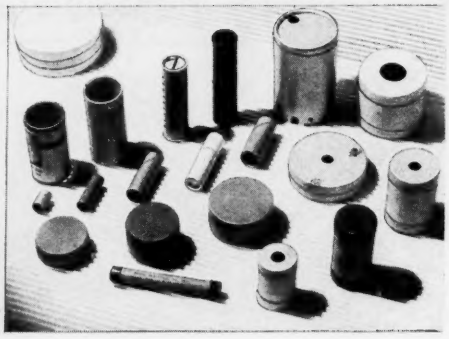
NEW YORK

XUM

CROSS TRADE MARK







Our line of manufacture includes a variety of paper cans and composite cans for insecticides, chemicals and various other food products.

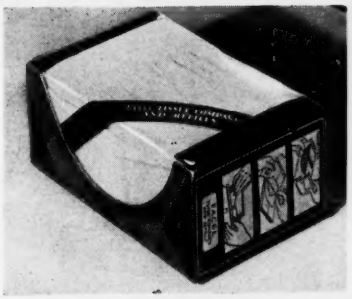
Cosmetic manufacturers will find our Talc and Dusting Powder Containers both attractive and economical. Made in a variety of sizes, they are readily adapted to colorful wraps—lithographed, printed or with raised printing.

Let us help to make your package a sales builder.

CROSS PAPER PRODUCTS CORPORATION

THIRD AVE. AT 140th ST.
NEW YORK, N. Y.

XUM



Protectoid is well named. Better than any other available material it affords complete protection for your product, supplying at the same time a wrinkle-less crystal-clear transparency that beautifies your product to the nth degree.

Even in the largest carton and set-up box windows, as in the case pictured at the right, Protectoid will not wrinkle, will not contract and tear.

For open cartons and dispensers Protectoid affords complete protection without detracting in the slightest from full visibility.

Being rodent and vermin proof, odorless and odorproof, air tight and water proof, there is no equal for Protectoid in the wrapping of foods and candies.

PROTECTOID....

THE IDEAL TRANSPARENT WRAP FOR EVERY TYPE OF PRODUCT.

Protectoid is a crystal-clear transparent wrapping material which has won wide acceptance because of its unique freedom from yellow cast, its low shrinkage factor (which eliminates shelf deterioration) and its unusually fine printing qualities. In every field of packaging, from foods to shirts, from liquors to sheets, Protectoid has proved its ability to win greater attention, greater display and greater sales. Acquaint yourself with this exceptional material. Write to the Development Division, Celluloid Corporation.

PROTECTOID
Trade Mark Reg. U. S. Pat. Off.
is a Product
of
CELLULOID
CORPORATION
ESTABLISHED 1872
10 E. 40th ST. NEW YORK

TO MEN WHO ARE MIGHTY PROUD OF THEIR PRODUCTS

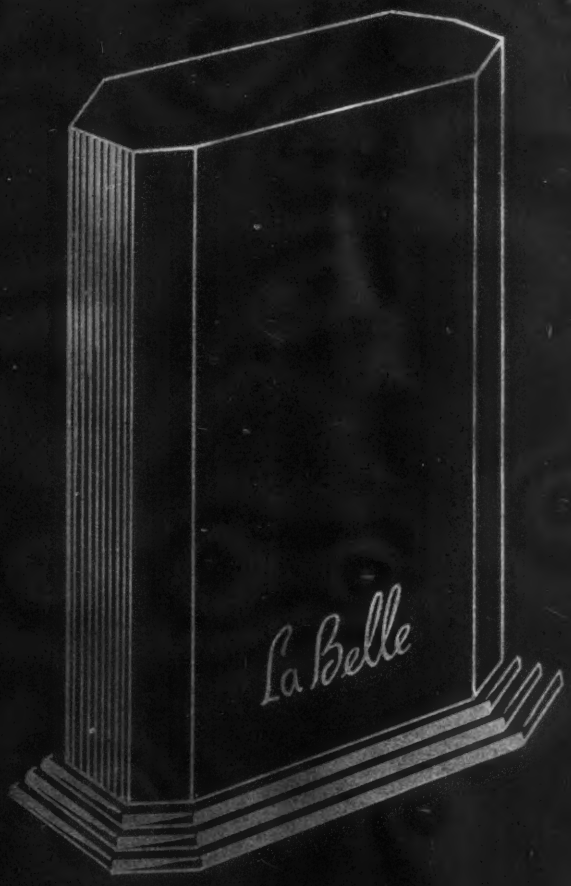
Through all these years of quality cutting some manufacturers have stood out against such suicidal tactics. Among our own customers we number many whose pride in their products has led them to a constant effort to maintain quality. With these customers we have been privileged to work in producing super-fine boxes at a cost well within the competitive range but of a quality which they have felt could not be obtained elsewhere.

We are mighty proud of our own product too.

To maintain and enhance its quality we have developed each year the latest machinery, the most up-to-date methods of boxmaking. We have kept our designing staffs intact and up to date. We have done all in our power to lead the way towards the production of finer packages capable of aiding the sale of fine products. If you have any reason to feel that your package is not up to the quality and style standards set by your product—we would appreciate the opportunity to consult with you upon its improvement.

J. N. Burt Company, Ltd.

PAPER BOXES PAPER PRODUCTS
514 SENECA STREET, BUFFALO, N. Y.



Chamois

IN THIRTEEN
MODERN COLORS

WATERPROOF — WASHABLE

"These are PROFITABLE BOX COVERING PAPERS *!"*

. . . because they are designed for the specific purpose of giving maximum sales value to your goods. And one great important reason for their popularity is that they are moderately priced . . . a fact that makes it possible for you to use them with little additional cost over ordinary papers.

Most of our box covering designs can be furnished in catalogue cover weights . . . a service that will give greater advertising value to tying up package, booklet and catalogue.

"Chamois" No. 2577 the sheet upon which this insert is printed is only one of the 13 modern colors that this smart paper comes in. Can also be had with a white back.

Sample books of any of our papers furnished upon request.

H & H

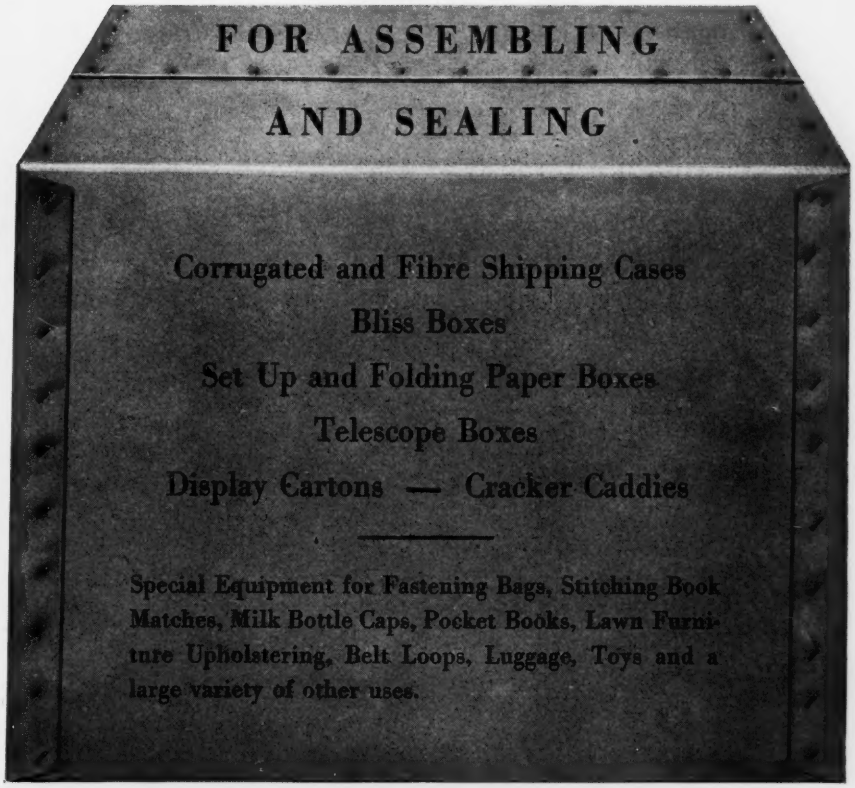
HUGHES & HOFFMAN

Fancy Box Paper Coverings

217-219 MERCER STREET
NEW YORK, N. Y.

BOSTON-BLISS-LATHAM

WIRE STITCHING MACHINES


FOR ASSEMBLING
AND SEALING
Corrugated and Fibre Shipping Cases
Bliss Boxes
Set Up and Folding Paper Boxes
Telescope Boxes
Display Cartons — Cracker Caddies
Special Equipment for Fastening Bags, Stitching Book Matches, Milk Bottle Caps, Pocket Books, Lawn Furniture Upholstering, Belt Loops, Luggage, Toys and a large variety of other uses.

Sold and Serviced by

DEXTER FOLDER COMPANY

28 West 23rd Street, New York, N. Y.

CHICAGO
117 W. Harrison Street

PHILADELPHIA
5th & Chestnut Streets

BOSTON
185 Summer Street

CLEVELAND
1931 East 61st Street

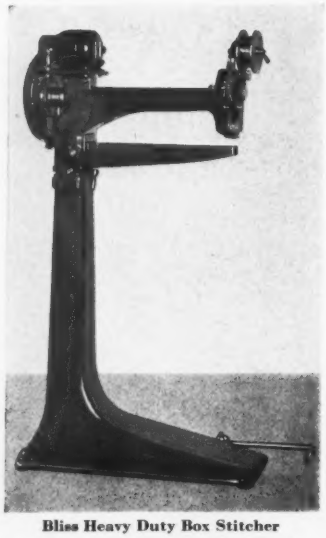
ST. LOUIS
2082 Railway Exchange Bldg.

SAN FRANCISCO
H. W. Brintnall Company
51 Clementina Street
Also LOS ANGELES—SEATTLE

DALLAS
Joseph F. Carter
5241 Bonita Ave.

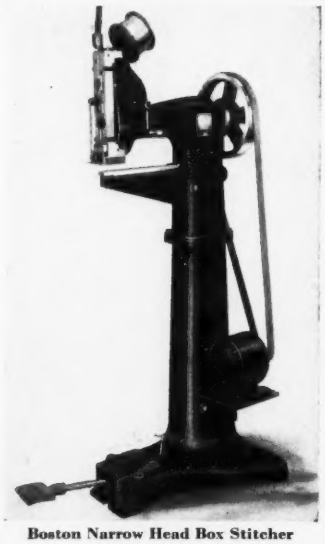
XUM

BOX STITCHERS



Bliss Heavy Duty Box Stitcher

Built for heavy duty work on all grades and thicknesses of boxboard used for corrugated and solid fibre shipping containers; also suitable for telescope containers, suit boxes, set-up boxes, folding boxes, cracker caddies, display boxes, cartons, etc.
Clearance between the stitcher head and clinching anvil, $1^{5}/_{8}$".
May be equipped with tables or gauges.
Bliss 90° or 45° Stitcher Head; uses standard ribbon and Hybar wires, also other flat and round sizes.
Three throat lengths—15", 25", 33" or 50".



Boston Narrow Head Box Stitcher

Embodies the Boston Vertical Feed Narrow Stitcher Head.
Stitches regular line of corrugated and solid fibre shipping containers; also telescope containers, suit boxes, folding boxes, cartons, bags and other specialties.
Suitable tables, gauges, and fixtures are available for special box work. The stitcher head is quickly detachable for service or adjustments.
Uses standard sizes of ribbon and Hybar wire, also other flat and round sizes.
Two throat lengths—12" and 24".

Boston No. 10 Box Stitcher

A light model machine equipped with the Boston No. 26 Narrow Stitcher Head. Adapted for light stitching operations, such as boxes, cartons, bag sealing, toys, etc.

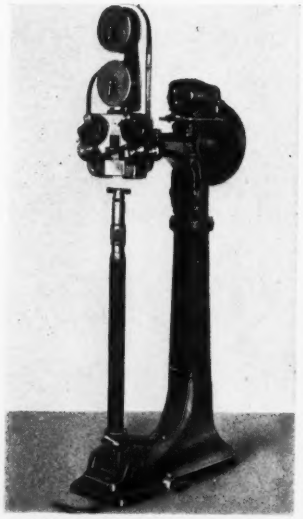
Wire used, 21 x 25 flat or 25 to 28 round. Work up to $^{1}/_{4}$" in thickness may be stitched. Crowns may be furnished for $^{3}/_{8}$" or $^{1}/_{2}$".

Machine may be equipped with standard table. Distance from stitch to inside edge of frame is 10 inches.

BOTTOM STITCHERS

Bliss Bottom Stitcher

Equipped with the Heavy Duty stitcher head. Recommended for stitching the bottoms of regular slotted containers, Bliss Collapsible boxes and many other purposes, where maximum production is required. No adjustments for sizes.
The rugged construction of the Bliss Bottom Stitcher assures long service on heavy duty work.
Built in two sizes: 15" or 25" throat.



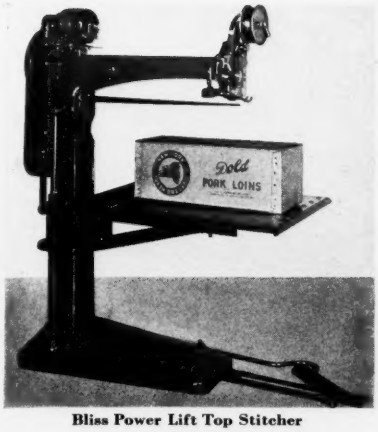
Bliss Duplex Bottom Stitcher

Drives two stitches simultaneously, enabling an increase in production of 50% to 60% greater than is possible with single head stitchers, without increasing labor cost.
One operator can stitch 6 to 12 boxes per minute. With two operators as many as 18 boxes per minute can be stitched.
Built in one size with 15" throat length.

Bliss Box and Bottom Stitcher

This is a general purpose machine popular in plants using both Bliss No. 4 boxes and regular slotted containers. The former can be assembled on box arm; the latter can be bottom stitched on post. Change can be made in one minute.
Built in two sizes, with 15" and 25" throat, respectively.

TOP STITCHERS



Bliss Power Lift Top Stitcher

Recommended where large numbers of heavy containers are used and is especially suitable for conveyor installations, as it is adjustable to coincide with conveyor line.

Equipped with a power driven work table. Table automatically stops in just right position for top stitching. One motor operates power lift and stitcher. A steel work table equipped with steel ball bearings permits free movement of container while being stitched.

Equipped with Bliss Heavy Duty Stitcher Head.

Built in one size, with 33″ throat length. Table size 26″ x 40″.

Bliss Quick Lift Top Stitcher

Used for wire stitching the tops of regular slotted containers and Bliss Boxes.

The steel table is supported by the Bliss quick lift mechanism which is positive in action and instantly adjustable up and down. Raising and lowering of table is facilitated by the use of counterbalancing steel springs.

Equipped with Bliss Heavy Duty Stitcher Head.

Built in three throat lengths—15″, 25″ and 33″, accommodating boxes up to 33″ long, 33″ wide and 28″ deep.

Table sizes: 26″ x 30″, 26″ x 40″, and 30″ x 40″.

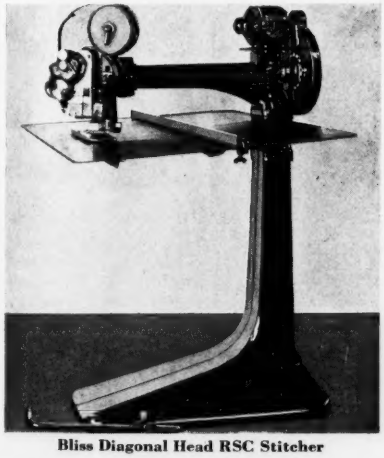
Bliss Portable Top Stitcher

Containers of large dimensions or exceptional weight which are inconvenient or impossible to stitch on a standard top stitcher are easily sealed with the Bliss Portable Top Stitcher. Useful for sealing tops of mixed sizes of containers which vary greatly in dimensions.

The machine weighs but 20 lbs. May be suspended from a hook or overhead trolley by means of a spring. Thus operator is free to move the machine in any direction without supporting its weight.

Uses No. 2 Hybar wire, with $^3/_8$″ crown.

REGULAR SLOTTED CONTAINER STITCHERS



Bliss Diagonal Head RSC Stitcher

Drives the stitch at an angle of 45° to the manufacturer's seam. Is a particularly desirable machine for stitching corrugated or solid fibre containers.

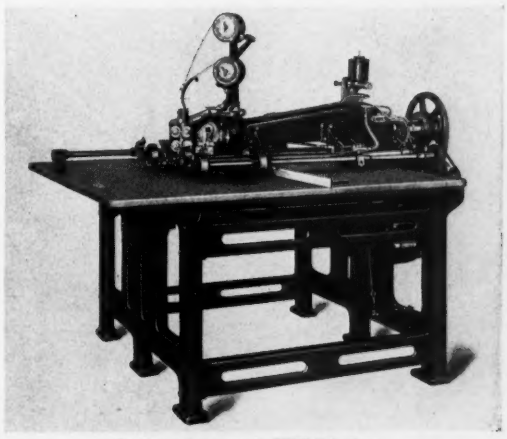
Operates at speeds of 300 to 400 stitches per minute. As many as 10,000 containers with five stitches are frequently produced in a day's run.

Equipped with the Heavy Duty Stitcher Head. Clincher device does not rest on box blank at moment of stitching, which feature eliminates crushing of corrugations or smutting fresh printing.

A parallel gauge table may be furnished. Gauge is adjusted in one movement and is always in correct parallel position.

Built in 32″, 38″ and 48″ throat lengths.

Stitching wire costs only an average of 3 to 5 cents per 1000 stitches.



Latham Automatic RSC Stitcher

This stitcher is used in large box making factories where high production, large volume, uniform spacing and maximum efficiency are necessary. Recommended for corrugated and solid fibre boxes and is particularly suitable for handling the seasonal demands for cases used for shipping canned goods, food products, bottled goods, etc.

Production varies from 1200 to 2500 containers per hour.

Drives a single or double row of stitches, or a single row of stitches with tie stitches at each end. The stitch is driven at a 45° angle.

The machine is ruggedly constructed and equipped with automatic lubrication system.

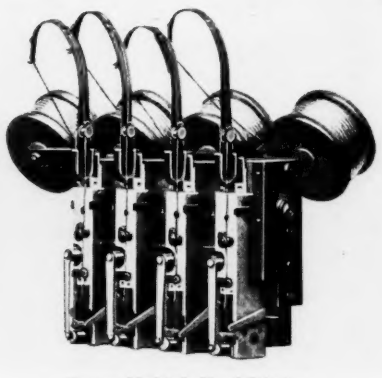
OTHER STITCHERS

Bliss Double Head Assembly Stitcher

Designed especially for the assembly of Bliss No. 2 and No. 4-2 Boxes. Standard machine handles boxes in dimensions up to 33″ x 28½″ x 28½″. Three, four or more boxes may be assembled per minute. Stitches are driven diagonally which gives maximum strength to the seam. The stitches are driven simultaneously in both flanges and properly spaced. The machine is quickly adjustable for boxes of any dimensions within its range.

Latham Corner Stay Stitcher

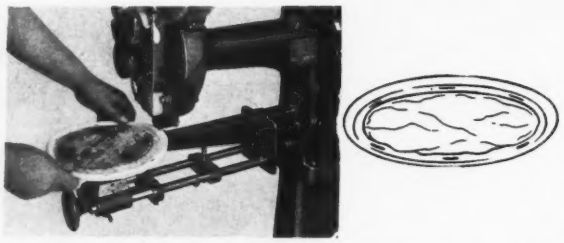
The Latham Corner Stay Stitcher places a right angle stitch around corner of box. The machine is used for hardware packing boxes, cracker caddy covers and boxes for other purposes; also for strengthening the higher grade set-up boxes which are later covered with paper. Straight cut-off or pointed stitch is optional. Distance from stitch to inside of frame is 12″. Wire used is .017 to .020 ribbon, or 20 x 25 flat.



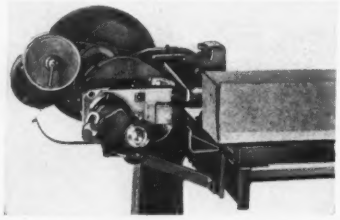
Boston Multiple Head Stitcher

The best known and most widely used head for multiple stitching operations. Machines for stitching book matches, wire finger pulls in milk bottle caps and similar work in gangs or sheets are equipped with Boston heads. Also used for numerous other types of machines built for special products that require stitching singly or in gangs.

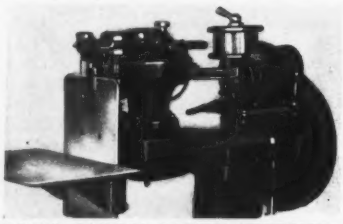
SPECIAL STITCHER ADAPTATIONS



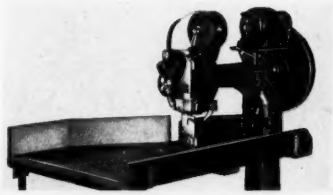
BLISS-FROST FOOD PACKAGE STITCHERS for stitching Frost Food Package used for merchandising pies, coffee rings, cakes and similar products.



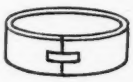
BLISS BUMPER CASE STITCHER for stitching ends of automobile bumper boxes and similar work.

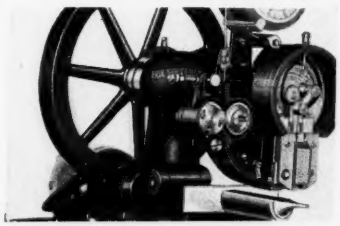


BLISS CADDY COVER STITCHER for attaching covers to caddy boxes.

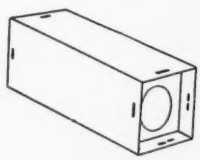


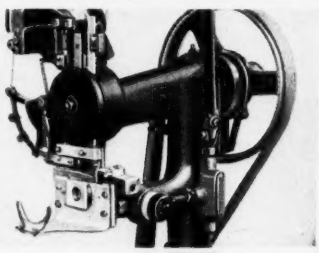
BLISS STOCKINETTE STITCHER used for stitching stockinettes over ham butts and similar products before smoking.





LATHAM BELT LOOP STITCHERS for stitching various sizes of leather belt loops.

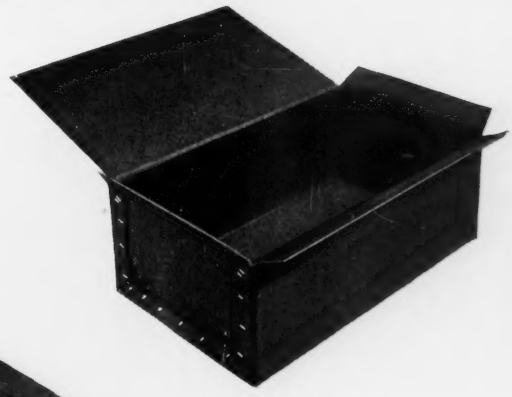




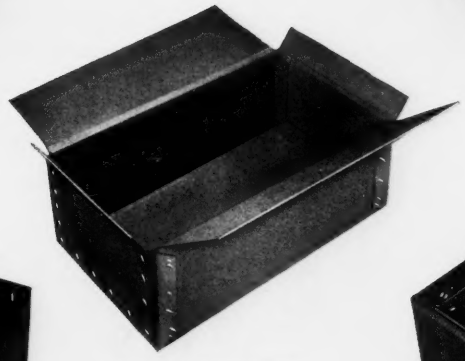
BLISS RECESSED END CARTON STITCHER for stitching special pilfer-proof cartons. (Used by RCA Radiotron Company.)

TYPES OF BLISS BOXES

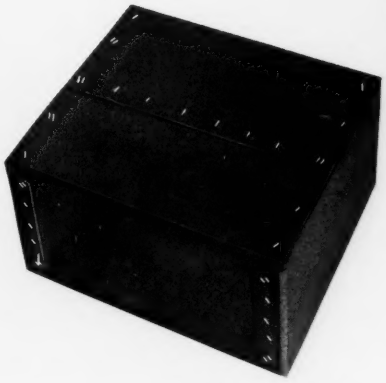
Bliss No. 2 Box—Open



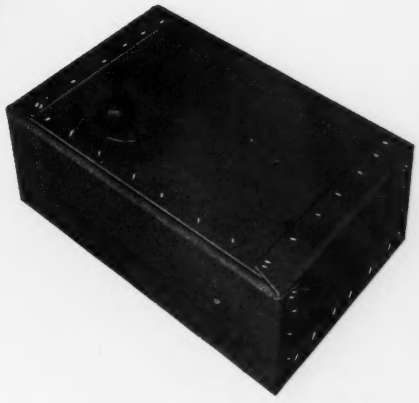
Bliss No. 4 Box—Open



Bliss No. 4-2 Box—Open



Bliss No. 2 Box—Sealed



Bliss No. 4 Box—Sealed

BLISS BOXES ARE THE STRONGEST FIBRE CONTAINERS AVAILABLE

THE SAFEST SHIPPING CONTAINER

Packing goods in BLISS BOXES assures the manufacturer of the greatest possible margin of safety to his goods while stored and in transit. The three-piece construction, with all vertical seams reinforced, makes the BLISS BOX the strongest corrugated or solid fibre container obtainable.

The special method of construction of the Bliss Box offers greatly increased resistance to all types of stresses, whether from within or without the box.

The various types of Bliss Boxes comply with all of the requirements of Rule 41 of the Consolidated Freight Classification.

LOW IN COST

Bliss Boxes are economical because they contain no waste stock. The saving in material and freight charges reduces the total cost an average of 10% and in some instances as much as 20% when compared with other types of fibre containers. The extra strength of the Bliss Box also often permits the use of lighter board which effects an additional saving. Stitching wire costs only an average of 3 to 5 cents per 1000 stitches.

EASY TO OBTAIN, ASSEMBLE AND SEAL

Blanks for BLISS BOXES are manufactured under license by all leading board mills and box factories in the United States and Canada and are therefore as readily obtainable as other types of shipping containers. A complete list of licensed manufacturers will be furnished on request.

Equipment for easy, convenient assembling and sealing of BLISS BOXES is furnished by the Dexter Folder Company, a fifty-three year old concern, with sales and service offices in New York, Chicago, Philadelphia, Boston, Cleveland, St. Louis, San Francisco, Los Angeles, Seattle and Dallas.

TYPES OF BLISS BOXES

The most popular types of Bliss Boxes are the No. 2, No. 4 and No. 4-2 models.

When No. 2 Box is assembled, the flanges form a double thickness of board on all vertical seams on the sides, and on horizontal seams at each end of the box.

When No. 4 box is assembled the three flanges form a double thickness on the ends, which gives added protection for canned goods and other commodities where an end thrust of the contents is to be guarded against.

The No. 4-2 box is doubly protected on all four corners and top and bottom of each end. It is the strongest Bliss Box and is desirable for carrying heavy loads, or where extreme rigidity is required for protection of contents.

Dexter men who have a wide knowledge of shipping requirements for many products will be pleased to discuss the advantages of Bliss Boxes and equipment for assembling and sealing them, at your request and convenience.

XUM

PARTS, WIRE, AND MECHANICAL SERVICE

All Dexter Offices carry replacement parts for all types of Bliss, Boston, and Latham Wire Stitching machines, and are prepared to render prompt and efficient service on any of these makes of stitchers.

A stock of all the usual sizes of box stay and bookbinder's wire is available at all offices for prompt shipment. Your orders for parts, service, rebuilding and wire are solicited.

DEXTER ENGINEERING SERVICE

Every manufacturer has some condition in his shipping department that may be improved or changed to his advantage either for greater efficiency or for economy.

The Dexter Folder Company maintains a corps of engineers who have had extensive experience in packaging and preparing for shipment a great variety of products.

The services of our organization are available, without obligation to you, for making a survey of your packing and shipping departments to determine the most economical methods of handling and protecting your goods while in storage and transit—when they are no longer under your control.

PARTIAL LIST OF USERS OF BLISS BOXES

American Salesbook Company
Armour & Company
Bassick Company
Berst-Forster-Dixfield Company
Beacon Falls Rubber Shoe Co.
Bear Brand Hosiery Co.
Brown Shoe Company
Samuel Cabot Inc.
Canadian Packing Co.
Canadian Shredded Wheat Co. Ltd.
Chicago Macaroni Co.
Cleveland Provision Company
Coast Manufacturing & Supply Co.
Commonwealth Match Company of Canada
Columbus Packing Co.
Cooper Wells Co.
Cudahy Bros.
Cudahy Packing Co.
Dells Paper Pulp Company
Detroit Brewing Company
Diamond Match Company
Dold Packing Co.
Dominion Rubber Co. Ltd.
Dunn & McCarthy, Inc.
East Tennessee Packing Company
Endicott-Johnson Corporation
Federal Match Co.
Food City Brewing Company
Fort Howard Paper Company
H. C. Godman Co.
Goodyear Rubber Co.
Haehnle Brewing Company
Hanover Shoe Company
Hecker H-O Co. of Canada, Ltd.
Hoberg Paper & Fibre Co.
Chas. Hollenbach Company
Huntington Shoe & Leather Co.
Hygrade Food Products Co.
Independent Baking Co.
Interstate Packing Company
Iowa Packing Company
Robert S. Johnston Company
Johnson Biscuit Co.
E. Kahns & Sons
Kingan & Co.
Lambertville Rubber Co.
A. C. Lawrence Leather Company
Lewiston Bleachery
Lindsay Ripe Olive Co.
Lookout Oil Refining Co.
Los Angeles Macaroni Co.
Los Angeles Soap Co.
Manufacturers Box Company
Mathiesson Alkali Co.
Oscar Mayer Co.
John Morrell Co.
National Biscuit Company
Ohio Match Company
Pacific Macaroni Company
Phoenix Toilet & Paper Co.
Prince Macaroni Company
Rath Packing Company
Ripon Foods
W. B. Roddenberry Company
St. Louis Independent Packing Company
Sauquoit Paper Company
Sayles Finishing Plants
Scott Paper Company
Shredded Wheat Co. Ltd. (England)
T. M. Sinclair Co.
J. P. Squire Company
Swift & Company
Uniform Chemical Products Co.
Van Camp Packing Co.
Weis Mfg. Company
Western Stopper Co.
West Virginia Match Co.
Whitehouse Biscuit Co.
Wilson & Company

DEXTER FOLDER COMPANY

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A MODERN RIBBON OF DISTINCTION

FOR EVERY PACKAGE-TYING PURPOSE

Du-Tone is the only Cellophane Ribbon of its kind . . . possessing exceptional strength because of the triple thickness of its border edges . . . yet more quickly and easily tied because of its single-thickness center. Du-Tone is made in two and three color effects, providing a brilliant, decorative, lustrous wrapping for merchandise of every sort.

Available in a wide variety of color combinations —with transparent or colored centers, self or contrasting borders—in widths from one quarter of an inch to five inches. Herewith are a few patterns. Send for our sample books or send us a sample of your product and we will suggest color schemes and return it to you tied with gleaming DU-TONE RIBBON.

DU-TONE RIBBON CORP.
142 W. 27th St. New York

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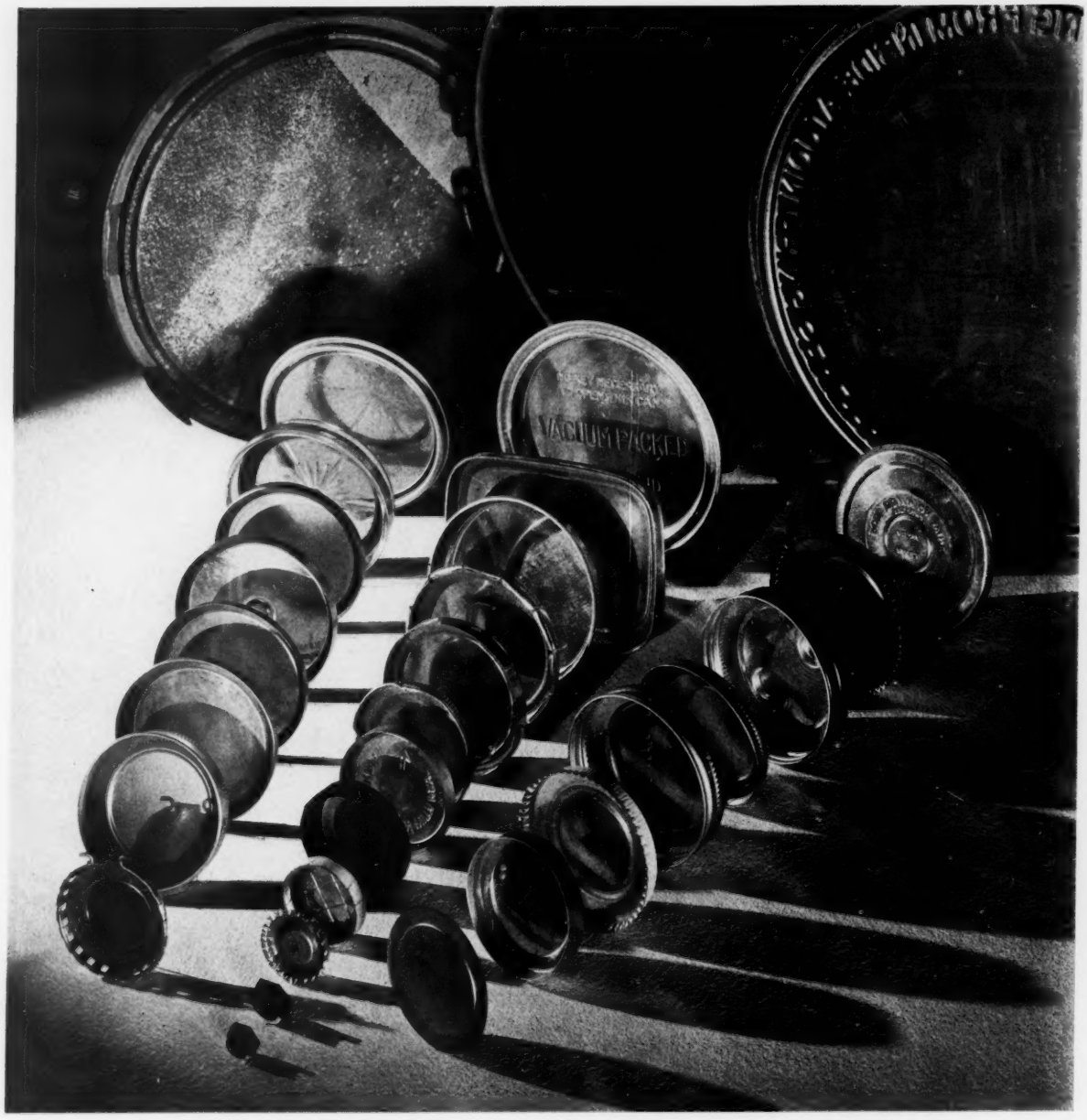


GOLD SEAL CAP COMPOUND

From drum heads to tube caps—no matter what size or shape your closure—there's a Gold Seal Cap Compound to solve your sealing problem. • The soft, flowed-in gasket of Gold Seal Cap Compound seals surely, economically—yet allows easy opening by the consumer. • Works equally well with hand or high speed lining machines. • Write Dewey and Almy Chemical Company, Cambridge, Mass., for complete information on how it fits your closure needs.

DEWEY AND ALMY CHEMICAL COMPANY

Since its beginning nearly twenty years ago our company has acquired a clientele embracing East and West, North and South. We have heard a lot about sectional prejudices and preferences, but the sum of our experience has been that *a good label is a good label anywhere.* Whether they live in Memphis or Detroit, Seattle or New York City, people will show about the same response to a sincere piece of work, and be just as quick to give the "berry" to windy pretensions. That is why national merchandisers have found they can depend on Foxon labels and service. If you sell nationally yourself it's a pretty good sign you can help someone else to sell nationally. It's largely a state of mind!

FOXON COMPANY
235 W. PARK STREET
PROVIDENCE, R. I.

"LABEL LEADERS"

PHOTOGRAPHS COURTESY OF OLIVER-FINNIE CO.

ECONOMIC MACHINERY COMPANY

Manufacturers of WORLD LABELERS

WORCESTER, MASS.

Chicago: Napoleon Savaria, 410 Monadnock Bldg. **New York: 15 Park Row** **Toronto and Montreal: Golden Gate Mfg. Co., Ltd.**

PRODUCTS

AUTOMATIC AND SEMI-AUTOMATIC LABELERS for applying labels on all types of bottles, jars, tumblers and other articles.

Economic Machinery Company has been engaged exclusively in the manufacture of labeling machines for more than thirty-five years.

Superior mechanical construction combined with the best of materials and skilled workmanship makes World Labelers the most satisfactory and durable machines obtainable. Thousands of satisfied customers heartily endorse Economic service.

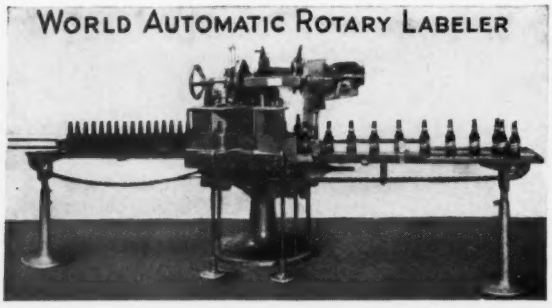
The company manufactures a complete line of hand-fed and automatic machines to meet all labeling requirements successfully and economically.

Every World Labeler is guaranteed to give satisfaction.

Write for advice regarding your labels, and send *labeled samples* of your bottles or packages showing the way you want them *labeled on the machine.* Detailed information and quotation will be sent to you promptly.

Let World Labelers solve your labeling problems.

All World Labelers are equipped with Zerk lubricating system.



THE WORLD AUTOMATIC ROTARY LABELER is the most efficient automatic labeler ever produced for labeling round bottles or jars. It is designed to meet the large production required in breweries and large beverage and food product plants.

The labelers are constructed either right-hand or left-hand. Where high speed equipment is installed our double unit will give any speed required and produce most satisfactory results.

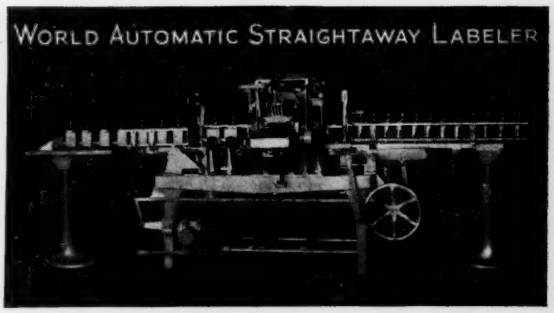
The labelers can be equipped with attachments for applying body labels only or body and neck labels on various sizes of bottles and jars. We can also furnish labelers for applying body and neck labels and foil, in one operation, on quart beverage bottles and other sizes.

Due to its simplified construction, all parts are readily accessible. The cost of maintenance is very low. Users of World Automatic Rotary Labelers reduce their labeling costs to a minimum.

Conveyor corner stands, and separate conveyor with independent motor drive, can be furnished as required.

The WORLD AUTOMATIC STRAIGHTAWAY LABELER is fully automatic, and has been designed to label flat, square, round, oval or panel bottles, modernistic jars or flasks and other packages. It is a custom built labeler, constructed for each individual customer's particular requirements.

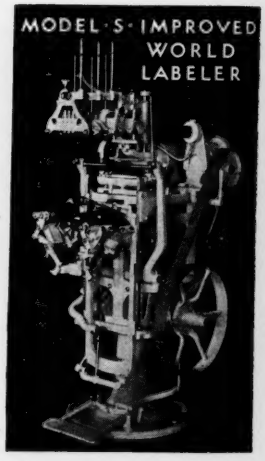
The bottles are automatically timed when conveyed into the labeler and, by means of special patented labeling mechanism, the entire surface of the label is gummed, and accurate registration of labels and smooth labeling guaranteed.



The labeler is built in various models. The single labeler applies front labels only, and the double labeler applies front and back labels in one operation. We also make special high production Straightaway Labelers for labeling two bottles at a time, operating at a speed of 100 or more per minute.

The labeler is equipped with feed and discharge conveyor and can be connected to other automatic units.

The labeler is heavily constructed and has proven most successful in many of the large production plants throughout the country.

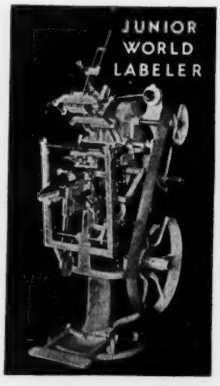


MODEL S IMPROVED WORLD LABELER is the latest type of the IMPROVED World Labeler, and has many exclusive mechanical features and improvements, developed by manufacturing experience of many years. It can be equipped with labeling attachments to label any size bottle, from small vials to gallon jugs.

The IMPROVED World Labeler is very generally used for applying body and neck labels and foil in one operation on quarts and other sizes of beverage bottles.

This labeler can be fitted with special attachments for applying strip labels on whisky flasks, and also for applying labels all around bottles.

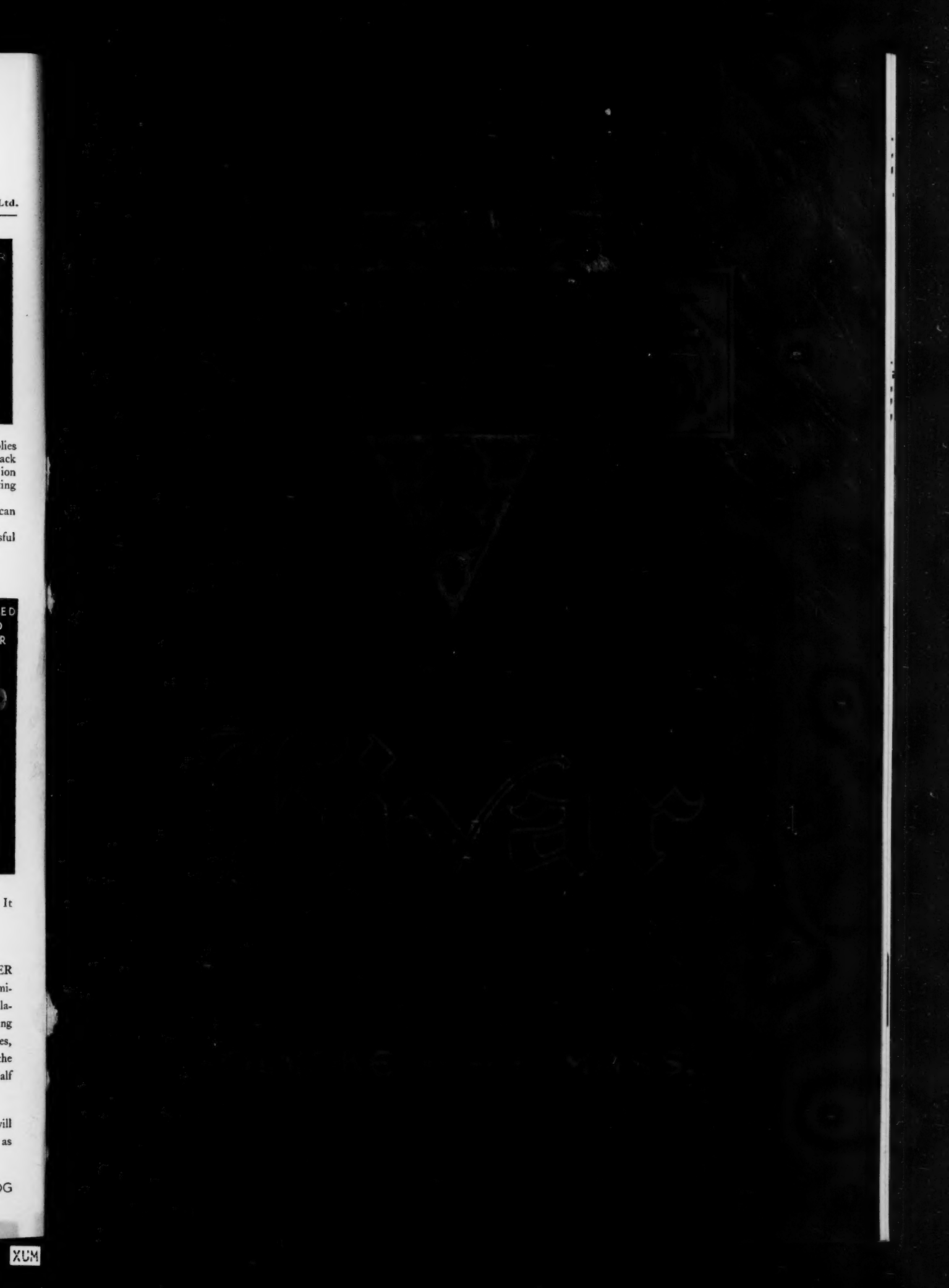
It is ruggedly constructed, quiet and simple in operation, and will label your packages efficiently and economically year after year. It is the most flexible labeler on the market.



The JUNIOR WORLD LABELER is the smaller type of hand-fed semi-automatic, belt or motor-driven labeler. It is designed for applying body labels only on round bottles, jars, or other containers, where the label does not extend more than half way around the bottle.

It is simple in operation and will materially reduce labeling costs as compared with hand labeling.

XUM



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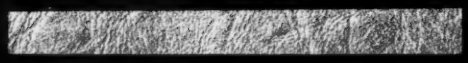


The Vellum

PYROXYLIN COATED
LEATHER
SUBSTITUTE

RIVAR quality is especially

Coverings, luggage linings, furniture

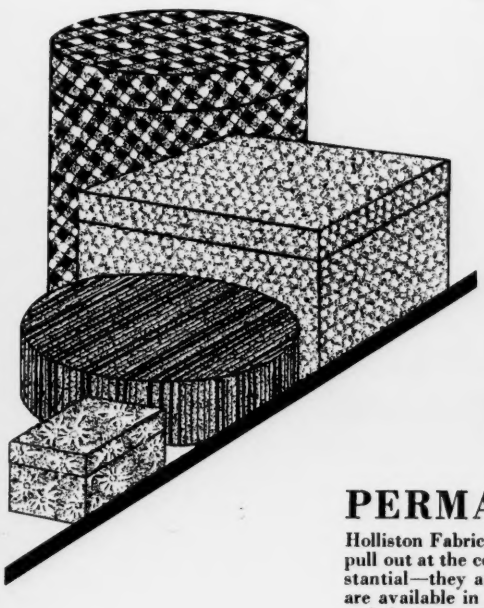
bindings, its low cost make it

durable leather-finishes are desi

are artistic and

the surface-wearing qualities are

THE BEVERIDGE MARVELLUM COMPANY
HOLYOKE MASS.



The CLOTH COVERED BOX

PERMANENT PACKAGES

Holliston Fabrics provide the required strength—will not tear on sides or pull out at the corners—will not scratch or damage easily. They look substantial—they are built to withstand a lot of handling. Holliston Fabrics are available in a wide range of attractive qualities, colors, embossings and designs—with waterproof and vermin-proof finishes if desired.

Appreciated by buyers of Cutlery, Silverware, Fountain Pens, Precision Instruments or Small Tools, Stationery Items, Toilet Articles, Pipes, Jewelry, etc.

DECORATIVE AND RE-USE CONTAINERS

Holliston Fabrics provide beautiful color and design effects, natural cloth finishes which take stamping perfectly. They have an eye appeal because they have a "Quality Look." Consider real cloth for the De Luxe or Re-Use container.

STOCK BOXES

Holliston Fabrics fulfill all the requirements of "Good Display"—Harmonizing colors, uniform appearance—durability—waterproof finish—easy to dust—may be cleansed with soap and water.

Excellent for Retail Stores, Stock Rooms, Transfer Files, Office Stationery, etc.

HOLLISTON *fabrics*

are built to work perfectly.—They present no production difficulties in the box plant. Write for Samples or ask to see the entire line of Holliston Standard and Special Fabrics.

The HOLLISTON MILLS, *INC.*
NORWOOD, MASS.,
Please send samples of Holliston Fabrics for Box Coverings.

We start where PACKAGING *leaves off!*

When the package is produced—your problems begin:

Will your dealers display it?

Will your customers see it?

Will it have the opportunity to SELL?

"Merchandising the Package" is our job — and the constant succession of Einson-Freeman selling triumphs is proof positive that our ideas WORK. It's a safe rule for selling success — "After you have your package—see Einson-Freeman for a plan to make it SELL!"

Display Ideas that win Prizes —and Sales

Creative Lithography for Advertisers

EINSON-FREEMAN CO. INC.

• LITHOGRAPHERS •

Starr and Borden Avenues • Long Island City, N. Y.

PLASKON

FIVE YEARS AGO

a new plastic material was born. Since its creation, in 1930, Plaskon has been the happy—and frequent—contributor to notable packaging history.

TODAY

its unsurpassed color beauty resides in a million appreciative homes in a thousand gleaming forms. With molders and manufacturers Plaskon has made warm and lasting friends.

TOMORROW

is faced gratefully by Plaskon for the still greater opportunity it will bring to serve creative packaging in every aspect of contemporary industry.

• Your letterhead, and your signature on it, will bring the useful chain of Plaskon color discs and the Plaskon—molded color—booklet to you.

TOLEDO SYNTHETIC PRODUCTS ★ INC.

TOLEDO • OHIO

PACKAGE with MOLDED COLOR

XUM

EXCLUSIVE SET UP BOXES

Safety

KWICKLASP

AMERICA'S FINEST
MAILING BOX
FOR
Economy and Safety

Price List of Standard Size
on Request

W. H. DEISROTH COMPANY, INC.

Established 1875

713 Spring Garden St. Philadelphia, Pa.

Is your product listed here?

There are definite savings to be made in package production which every plant executive will *want* to know. . . . There are package improvements which will only prove feasible and economical when machines are *designed* to produce and handle them. . . . Facts, demonstrated by daily production performance of individual or "in-line" automatic units, provable by your own figures, are available on demand, showing how such problems were overcome by the New Jersey Machine Corporation. . . .

Abrasives	Handkerchiefs
Advertising Displays	Hosiery
	Jewelry
Belts	
Books	Knitted Goods
Boxes	
	Laminated Products
Cake	Lithographs
Calenders	
Candy	Notions
Cereals	Novelties
Cigarettes	Nuts
Cigars	
Cocoa	Paints
Coffee	Perfume
Confections	Pills
Containers	Playing Cards
Cosmetics	Powders
Cups	
	Rubber Goods
Dates	Salt
Display Cards	Sanitary Goods
Dried Fruits	Shirts
Drugs	Shoes
	Silverware
Figs	Socks
First Aids	Spices
Foods	Stationery
	Sweaters
Games	Underwear
Garters	
Gifts	Wallboard
Gloves	Watches
Greeting Cards	Window Display Posters
Groceries	

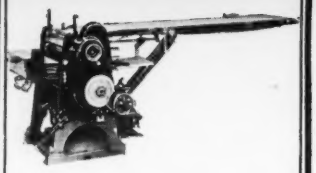
See where you can save—

in daily waste—and hourly wages . . . . . plus

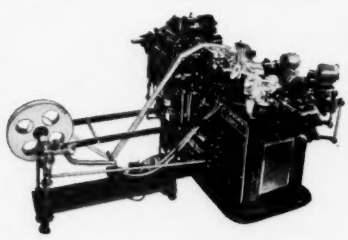
SPEED

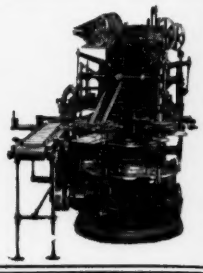
XUM

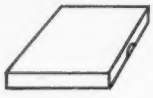
Does your problem



Dependable automatic units PLANNED to speed up production and lower your operating costs







rectangular box-making

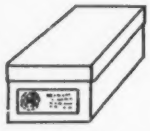
pie and cake containers

5-side wrap of billiard chalk

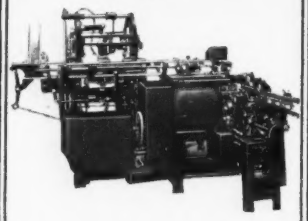
cylindrical containers

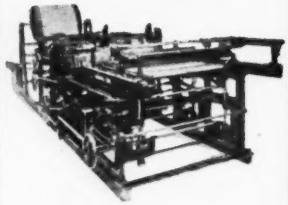
multi-cornered "hand-made" type boxes

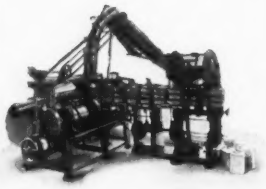
round can labeling

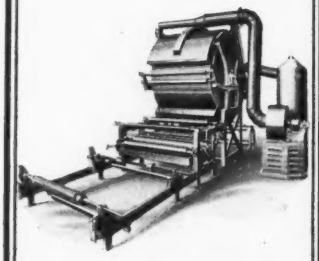


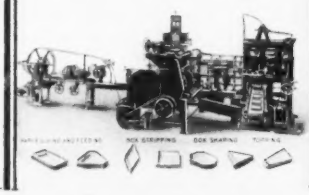
large shoe, shirt and candy boxes











These things we have accomplished:

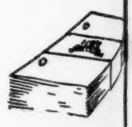
Originally, the building of machines which would repeat certain hand-operation. Since then, the design and construction of *nth* degree, automatic units which bring the manufacturers dependence on human frailty to the vanishing point. New Jersey Automatics are built with a complete mastery of mechanical anatomy, incorporating the function of arms, legs, hands, feet and fingers; even the equivalent of *nerve centers*, the truly modern application of brain-power to mechanics.

Every illustration on this page—and space prevents showing more—demonstrates the scope of our experience. We have cut seemingly essential cost, waste, time and space; we have evolved packages which could have been designed only with a complete knowledge of the science of mechanics.

Not only our record, but our ability merits an invitation from reputable manufacturers to preliminary confidential discussions of their problems.

snap-fastened novelty pencil box

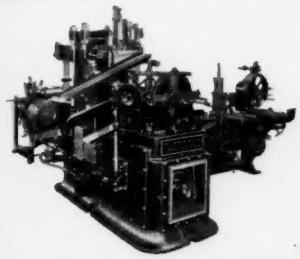
coin wrapper

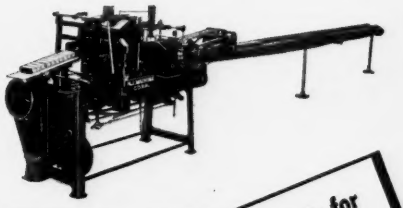


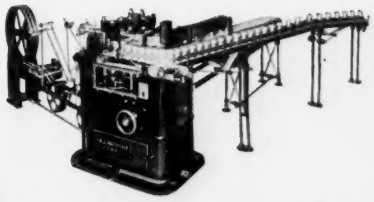
package banding

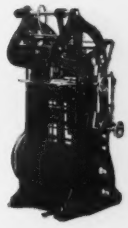
Every New Jersey Machine combines precision, savings in

call for Diversified Experience?



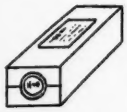






WANTED—An opportunity to lower costs for manufacturer or converter facing production problem, by engineers skilled in designing machines to improve production processes, with an eye to wage-scales, cost of raw materials and package improvements....

labeling-top and ends

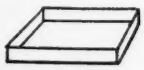


three-side labeling and sealing

food cups and containers

cigar box labeling, inside and out

pen point grinding



tray making for transparent wraps

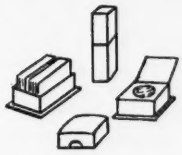
food package and seal

Somewhere in every plant —

an operation, a process or a combination of each has reached a volume, wherein the *per package* savings could reach a substantial sum. Effecting it *might* mean a worthwhile re-design; more frequently it entails merely the degree of automaticity. An interview with a New Jersey representative provides information (without obligation). Summon one of our engineers, *now!*

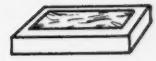
NEW JERSEY MACHINE CORPORATION
1550 WILLOW AVE., HOBOKEN, N. J.

tight wrap package



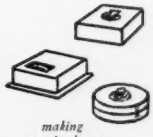
making drug, pin and card boxes

tip-on mounting



transparent window containers

ice-cream packages



making powder boxes

combining to board or rolled stock

bottle sealing

Dictate that Problem letter Now!

raw materials, minimum labor cost and **SPEED**

Every dot on this map indicates one or more plants—

PROFITING—

by the manifold advantages of New Jersey Automatics

here is a partial list of some nationally known users of New Jersey Production Units

American Can Company
American Playing Card Co.
American Tobacco Company
Bear Brand Hosiery Company
Brown & Bigelow
F. N. Burt Company
The Canister Company
Davis Baking Powder Company
Dennison Manufacturing Co.
R. R. Donnelly & Son
E. I. du Pont de Nemours & Co.
Einson-Freeman Company
Esterbrook Pen Manufacturing Co.
Forbes Lithographing Company
Goodyear Tire & Rubber Co.
Heller & Merz
Hood Rubber Company

give YOUR plant every competitive advantage; summon New Jersey engineers to suggest improvements in production, or to develop your own ideas.

NEW JERSEY MACHINE CORPORATION
1550 Willow Ave., Hoboken, N. J.

Andrew Jergens Company
Johnson & Johnson
Kaffee Hag Corporation
Kalamazoo Stationery Company
Montag Brothers
National Biscuit Company
National Blank Book Company
Old Dominion Box Company
Pabst Corporation
W. C. Ritchie Company
W. F. Schrafft & Sons
Shoup-Owens Company
Standard Brands
A. Stein & Company
Wadsworth Salt Company
Warner Brothers Company

MOIRE Sheen

FOR THOSE WHO FASHION
BEAUTIFUL BOXES

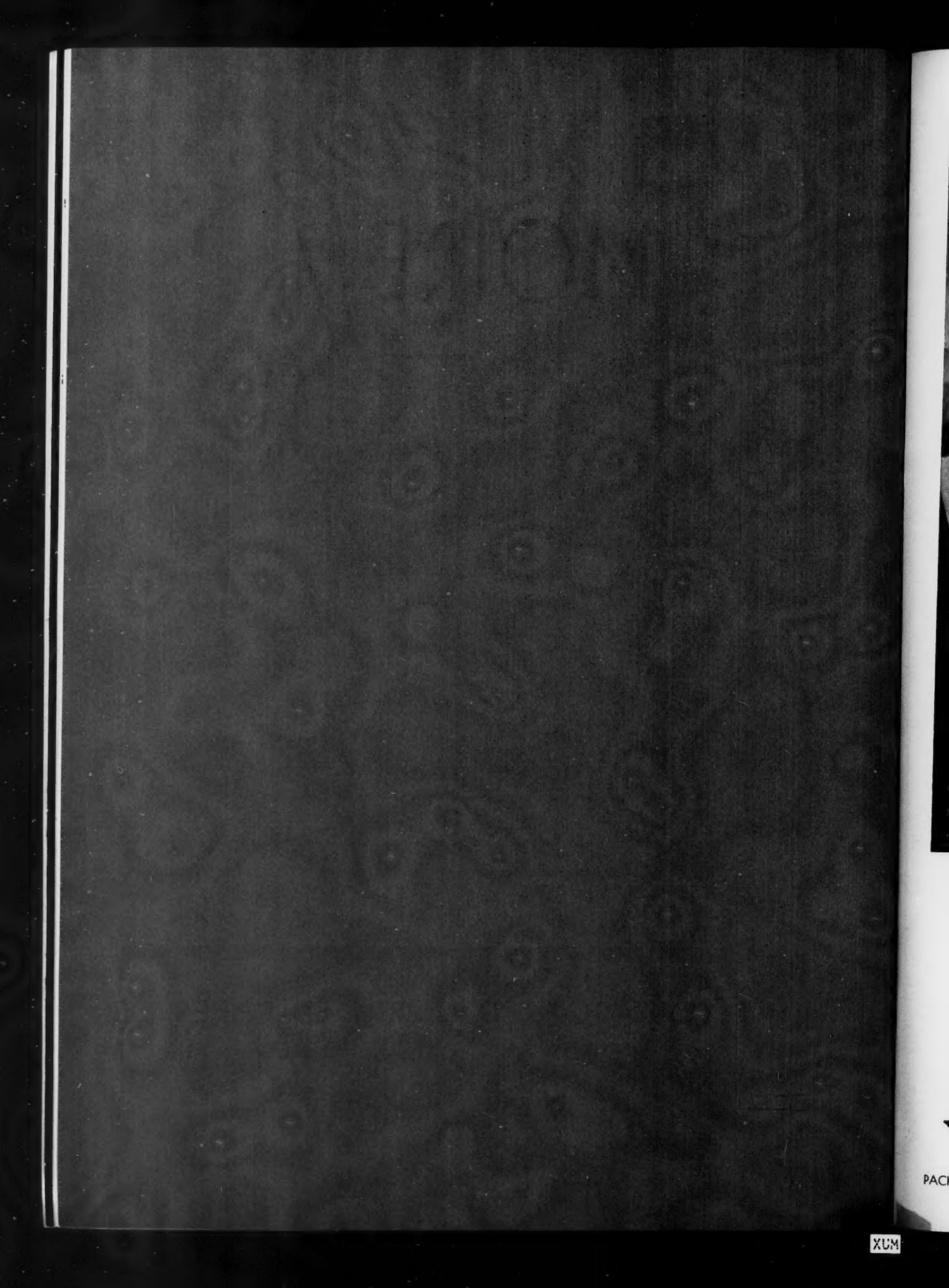
With its atmosphere of richness and smart colors Moire Sheen has those qualities which appeal to those who fashion beautiful boxes. A personality of its own to enhance any box it covers. Combining with printability ... whether it be letterpress or lithography ... and its wide range of twelve beautiful colors, Moire Sheen takes first place in the utmost in box covering papers. We will gladly send you specimens of a variety of colors and patterns.

★

TRADEMARK PAPERS created in attractive backgrounds will identify and protect your merchandise as well as increase its sales value. Full information on Trademark papers is yours for the asking.

Complete Packaging Ideas at your disposal without obligation. A wide range of stock papers for every purpose.

[illegible] COATED [illegible] PAPER CO.
[illegible] BROADWAY NEW YORK CITY



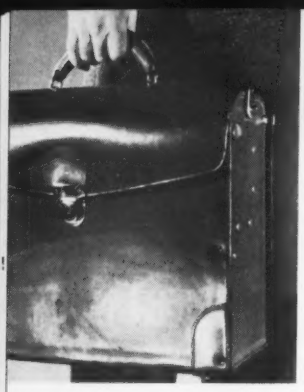
LEADERS of industry use Farrington Boxes of sturdy metal form and leather appearance. Such boxes cannot break or warp. They serve as permanent cases for a variety of articles; yet are inexpensive, so that they are practical for use when handsome and colorful display is the only requirement.

May we suggest a package for you?

Farrington Boxes

Boston 30, Mass. **Canadian Factory at Toronto**

XUM



WHEN THE ANCHOR CLOSURE ENGINEER CALLS

It's worth your while to discuss closure and sealing problems with the Anchor representative. Let's be perfectly frank, he is primarily a salesman, with goods to sell. But that is by no means all. More than that, he is a closure engineer, a specialist familiar with the sealing of hundreds of diverse products.

He knows difficulties to be avoided, conditions that will come up, specialized problems involved in packaging particular products. He has ideas to impart . . . on containers, on merchandising, on packaging. He is a friend of the production man; recognizes what is necessary to obtain smooth, speedy, economical, trouble-free operation. Processing requirements, bottling and sealing machinery, he realizes must be taken into account.

Of even greater importance to you than the man himself are the products he has to offer—Anchor's line of closures. The completeness of that line is one potent reason for the Anchor man's efficiency; why his visit is of more than ordinary value. For he is

HE BRINGS THE MOST COMPLETE LINE OF CLOSURES MADE

bound by no limitations, but is in position to recommend the exact type of closure best suited to your special needs.

The bag he carries contains styles of closures for every conceivable use, to meet the sealing requirements of every sort of glass packed product; as well as the appearance requirements of any package design or merchandising purpose.

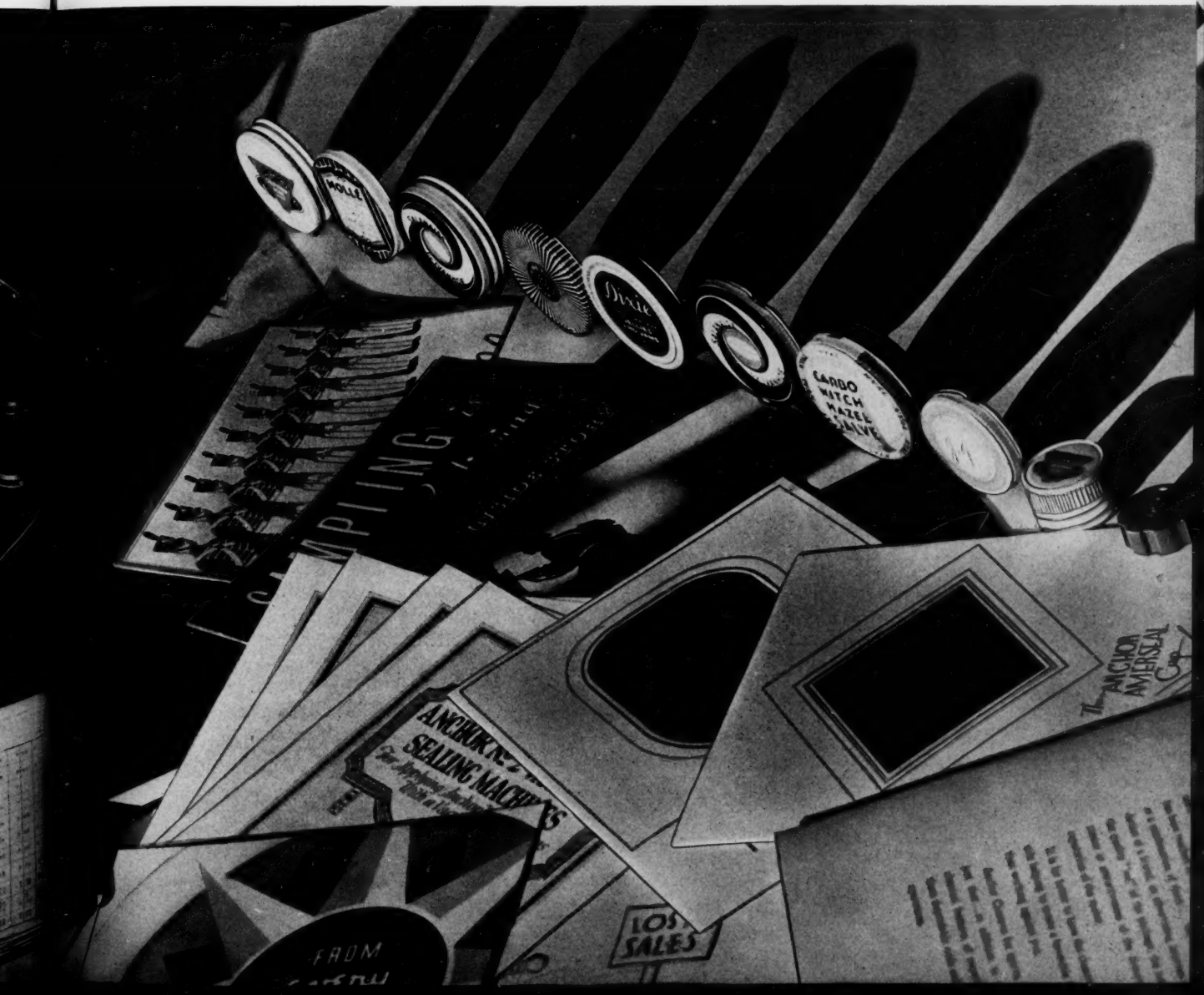
You will be interested in seeing the contents of this bag we are picturing—the regular demonstration kit of the Anchor representative. It will give you a new idea of closure possibilities, and may be the means of improving the effectiveness of your packages. If you will let us know a convenient time, we will see that an Anchor representative calls on you in the near future.

★ ★ ★

ANCHOR CAP & CLOSURE CORPORATION

LONG ISLAND CITY, N.Y. TORONTO, CANADA

ATLANTA · BALTIMORE · BOSTON · CHICAGO · CINCINNATI
CLEVELAND · DENVER · DETROIT · HOUSTON · LOS ANGELES
LOUISVILLE · MONTREAL · NEW YORK · PHILADELPHIA · PITTSBURGH
ROCHESTER · ST. LOUIS · SAN FRANCISCO · SEATTLE · TORONTO



FOR MOLDED BOXES

FOR MOLDED CLOSURES

CONSULT WATERBURY

The Waterbury Button Company has the longest corporate history of any molder in the field. For scores of years, Waterbury experts have been attacking and solving molding design and production problems.

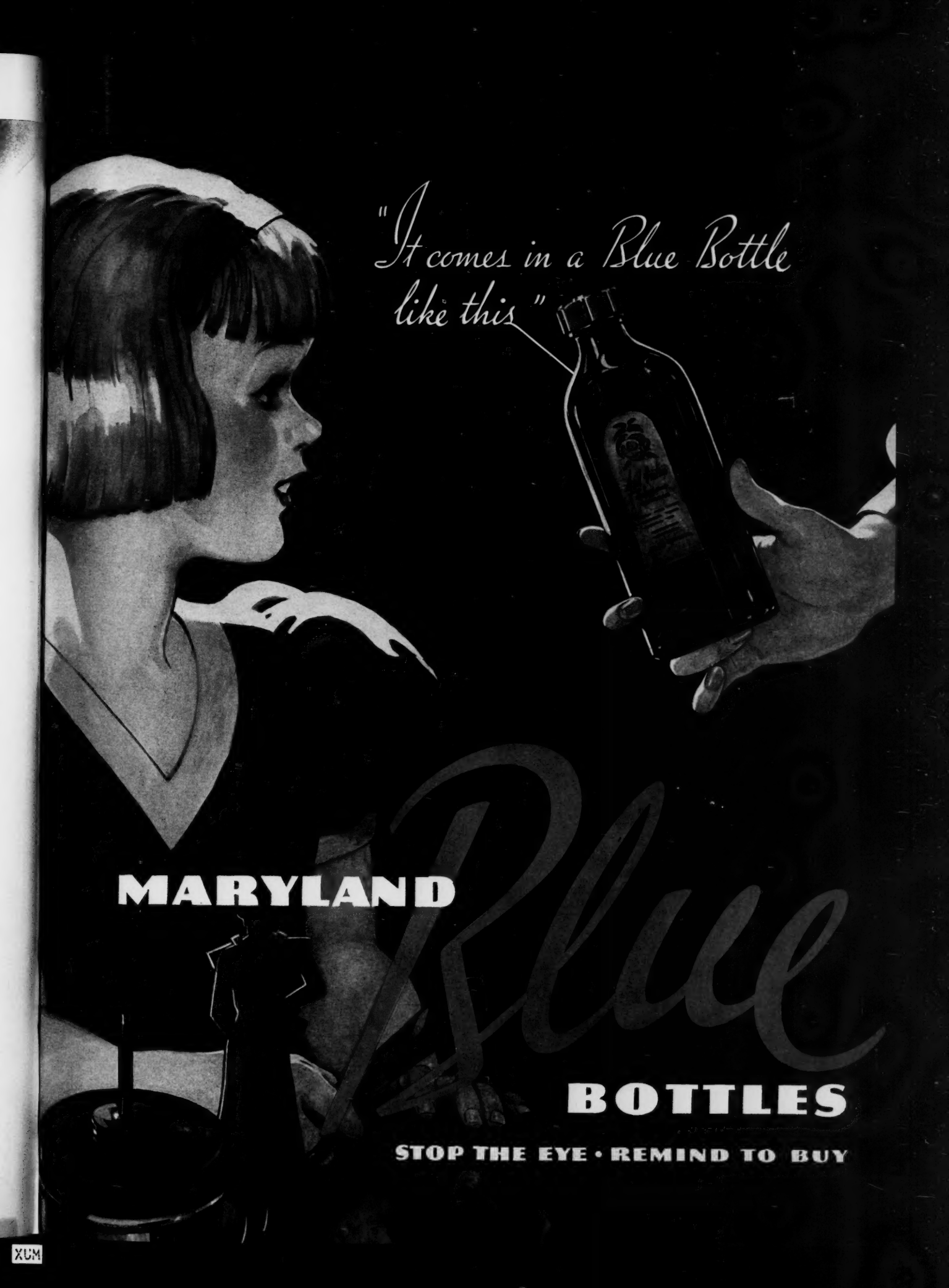
Particularly in the package and closure field, have Waterbury engineers won recognition. Their services are commanded by many of the foremost packagers in the cosmetic, liquor and food lines. Backed by one of the most modern and efficient plants in the country, equipped to work in metal as well as in plastics, they are prepared to aid and advise you in the solution of your package or closure problems. Write for full information to—

WATERBURY BUTTON COMPANY

Established 1812

MOLDING DIVISION

WATERBURY, CONN.


"It comes in a Blue Bottle like this"
MARYLAND
Blue
BOTTLES
STOP THE EYE • REMIND TO BUY

EASY TO IDENTIFY

EVEN A CHILD can recognize your product when it is packed in Maryland BLUE Bottles. Their brilliant color catches the eye and makes your product stand out on display above competing products. And the rich, royal BLUE suggests the high quality of the product within.

It takes Color to sell goods these days. And we believe that Maryland BLUE Bottles are the most distinctive colored containers on the market. No wonder they have been adopted for so many famous products.

Maryland BLUE Bottles and Jars are now available in many smart stock shapes and sizes as well as in special designs.

We'll gladly send samples if you'll write telling us the nature of your product and the sizes in which it is packed. Maryland Glass Corporation, Baltimore, Maryland. New York Representative: 270 Broadway, New York City. On Pacific Coast: Owens-Illinois Pacific Coast Co., San Francisco, California.

Maryland Green Tint and Flint Bottles are of the same high quality as Maryland Blue

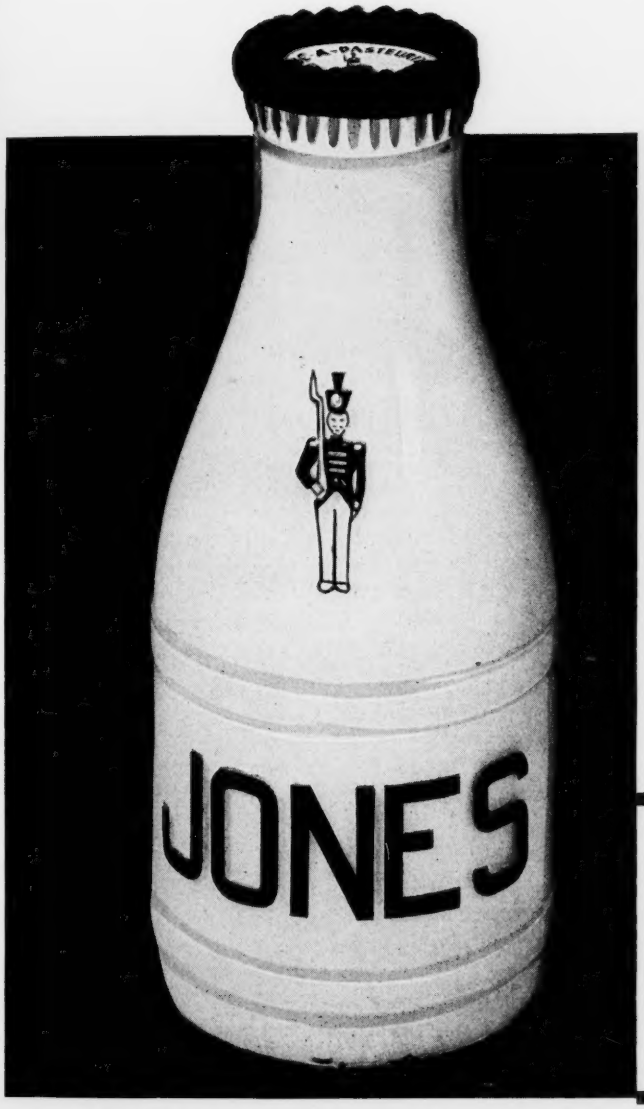
BECAUSE THEY STAND OUT

MARYLAND *Blue* **BOTTLES**

A SEAL-KAP

THE DIFFERENCE BETWEEN A BOTTLE OF MILK

and a PACKAGE OF MILK



In the 1934 All-America Packaging Competition a milk bottle was recognized as a package for the first time—

a SEAL-KAP was on that milk bottle.

The Seal-Kap gave that bottle sales appeal—complete protection—convenience—attractiveness—made it a prize-winning package.

For the same reasons Seal-Kaps appeal to the consumer more than any other type of cap. They can be removed with a twist and a lift—replaced with a snap—resealing the bottle tightly. They protect the milk until the last drop has been consumed.

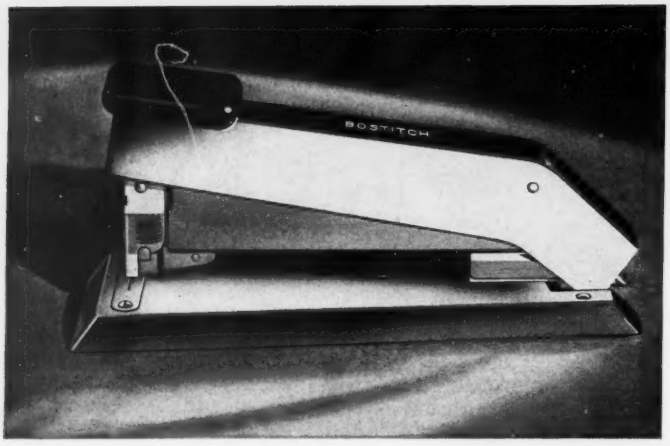
"Branded" Milk tells how colored Seal-Kaps can be used to stimulate sales. It is modern—well-illustrated—Send for a copy for your files.

AMERICAN

SEAL-KAP

CORPORATION

11-05 44th Drive, Long Island City, N. Y.



BOSTITCH HAMMER

A miracle tool that with one hand . . . one blow . . . drives home a staple even into hard wood or through soft metal with ease. Used on boxes or barrels . . . in shipping rooms . . . in factories . . . in window and outdoor display work.

THE NEW BOSTITCH FASTENER

Modern . . . Streamline, powerful construction.
Easy . . . Finger-tip pressure works it.
Strong . . . Hard blows can't hurt it.
Speedy . . . Timed for quick action.
Smooth . . . Safety catch prevents clogging.
Simple . . . Loads quickly through front door.
2 in 1 . . . Base folds back to make a tacker.

BOSTITCH POCKET FASTENER

Entirely new and different. It fits the hand . . . the pocket . . . the desk drawer . . . the brief case. It will hang on a nail. Light and portable, it can follow the work anywhere. It has power and durability.

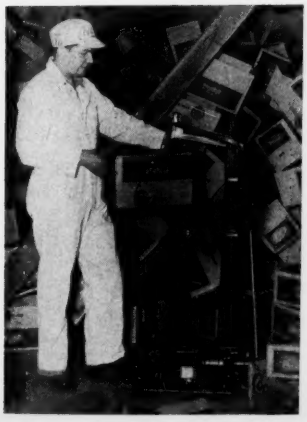
Bostitch-fastening offers a speedy, simple, economical method of attaching, sealing or fastening a wide variety of merchandise. In the illustration at the left, for example, is a widely sold lipstick, firmly attached to a card to provide greater display, freedom from theft and destruction, and full instructions for use. On the opposite page is a group of related items, held to one card by Bostitch staples and a counter display card . . . . both illustrative of the almost unlimited possibilities of this sure fire method of insuring sales and display.

THE sealing of transparent bags containing food products, candy, etc., is another popular use for Bostitch-fastening. As a speedy, economical and hygienic method of sealing and closing bags of all kinds, it is unequalled.

Bostitch staplers are paying dividends in larger sales and profits to users everywhere. Made in a complete range of models . . . . from small 8 ounce pocket fasteners to large automatic power machines.

Send us samples of your products and we will gladly make recommendations without obligation, giving full particulars as to type of machine recommended, cost, etc.

Get in touch with our nearest office.



Bostitch Type F Staple Bottomer handles either corrugated or fibre containers up to 34 inches in depth with ease . . . the most popular low priced bottomer on the market . . . foot or motor-driven.

Bags by

Modern merchandising demands modern packaging. Bags by Royal are a part of the modern trend. Styled for a thousand-and-one uses, Royal Bags bring sparkle and sales appeal to a thousand-and-one varied products. For adding sales appeal to *your* product, by all means consider Bags by Royal. Write today for free sample bags designed to fill your particular requirements.

XUM

ROYAL

WE ARE INTERESTED IN BAGS FOR.....

.....

PLEASE HAVE YOUR SALESMAN CALL.....

.....

PLEASE SEND US FURTHER INFORMATION ABOUT.....

.....

.....

.....

NAME.....

COMPANY.....

CITY.....

STATE.....

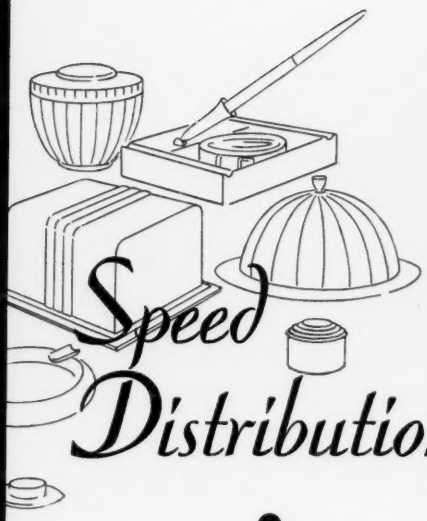
THOMAS M ROYAL & CO

PHILADELPHIA U S A

NEW YORK CHICAGO DETROIT PITTSBURGH BOSTON
ST. LOUIS MINNEAPOLIS SAN FRANCISCO DAYTON SYRACUSE
FORT WORTH ATLANTA HOUSTON

XUM

PACKAGES MOLDED of RESINOX



Speed Distribution

•

ACCELERATE SALES

Packages molded of Resinox find their way quickly to the dealer's counter . . . and into the hands of the consumer. Packages molded of Resinox are colorful, durable, desirable. . . . Resinox molds perfectly, cures uniformly, finishes with high luster and strength. Resinox is odorless, water-resistant, non-bleeding, of high torque strength, and available in a wide variety of colors. . . . Packages and products molded of Resinox are permanently beautiful.

KEEP IN TOUCH WITH RESINOX DEVELOPMENTS

RESINOX CORPORATION

Subsidiary of Commercial Solvents Corporation and Corn Products Refining Company
230 Park Avenue, New York City

Molding Resins • Molding Compounds • Laminating Varnishes

Take your pick—
they're all packaging winners!

The sole purpose of sampling and packaging attractively is to WIN MORE SALES. And to win more sales, a package first must win more attention than its companions on the shelf.

Whether it be perfumes or powders—capsules or cosmetics—dyes or drugs—look over the extensive line of Kimble Glass Vials first. Then take your pick, for each one is a packaging winner. Every vial is automatic-machine-made for uniformity and retempered for strength. There are Kimble Vials for Droppers, Applicators, Shaker Tops, Re-Seal-It-Caps, Goldy Seals, Slip Caps, Screw Caps of metal and Bakelite.

And further—Kimble Vials are air-tight and leak-proof. They are scratch-proof, sun-fast, non-inflammable and hold their shape and their contents permanently. They are so light in weight that shipping costs are pared to the minimum.

★ ★ ★

Play safe with your sampling and packaging plans by consulting Kimble first!

KIMBLE GLASS COMPANY

VINELAND, NEW JERSEY.

NEW YORK • PHILADELPHIA • BOSTON

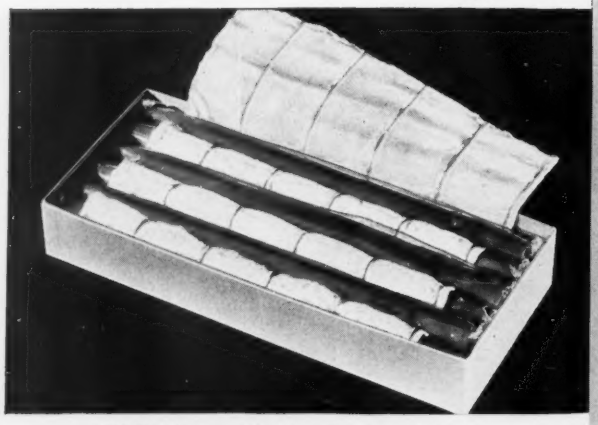
CHICAGO • DETROIT

Protected by

Kimpak

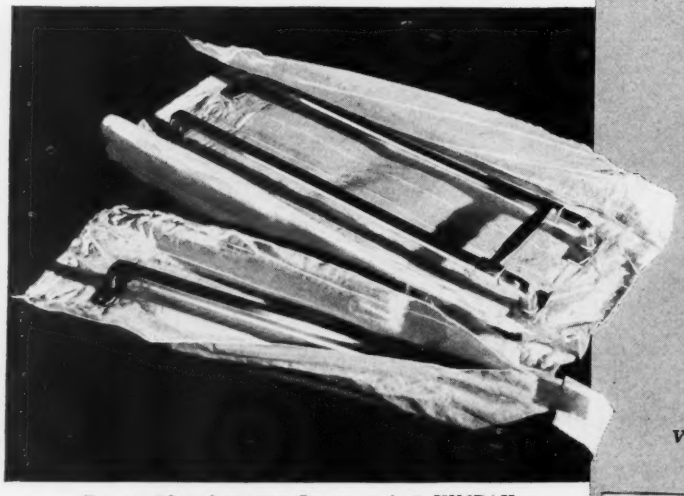
REG. U.S. PAT. OFF. & REG. IN CANADA

CREPE WADDING



KIMPAK *protecting candles from Columbia Wax Products Company during shipment.*

Viavi Company guards against breakage during shipment with KIMPAK



Payson Manufacturing Company finds KIMPAK *ideal in preventing marring to finish of their Pull and Push Bar door units.*

Paul Hanger Company uses KIMPAK *when fragile artificial or decorative confections are shipped via parcel post*

KIMBERLY-CLARK CORPORATION

NEENAH, WIS.

8 South Michigan Avenue, Chicago
122 East 42nd Street, New York City
510 West Sixth Street, Los Angeles

XUM

these products reach customers in good condition

How hundreds of manufacturers have solved shipping problems—and with surprising economies

MANUFACTURERS everywhere have found that the safest, most economical way of protecting articles during shipment is with KIMPAK Crepe Wadding. Quickly and easily applied, KIMPAK saves time, labor and money in packing. And it not only affords an adequate protection for fine finishes, but also minimizes the danger of breakage. The customer gets the product in the same condition as when it left the factory, and he is spared the nuisance of having to handle messy packing material.

KIMPAK is a soft, resilient crepe wadding that comes in rolls, sheets and pads of various thicknesses. It is free from dirt, grit and foreign substances. It is an ideal protection for liquids because KIMPAK absorbs 16 times its weight in moisture, and it conforms to the Post Office regulations covering shipment of liquid and liquefiable products by parcel post.

KIMPAK can now be had backed with glassine in a wide variety of colors. Manufacturers of articles which must be attractively packaged will find this new form of KIMPAK ideal for their purposes.

Let us show you how KIMPAK will solve your shipping problem. We will be glad to send you, absolutely free, the KIMPAK "1935 Portfolio," containing samples of the many types of KIMPAK.

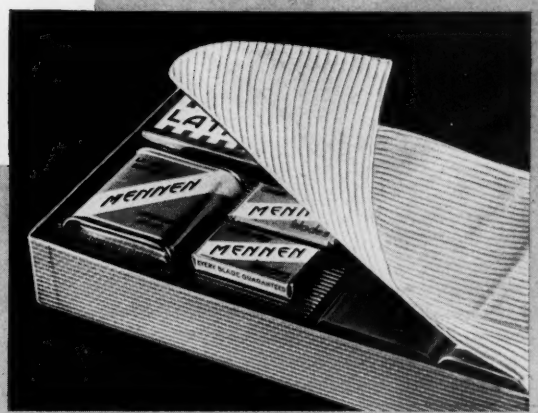
KIMPAK protects the beautiful finish of the Nesco Princess Model Casserole

5-ply tissue backed, knurl embossed KIMPAK *sample*

FREE! KIMPAK "1935 Portfolio"

To obtain copy just send us request on your letterhead. Please address to nearest sales office.

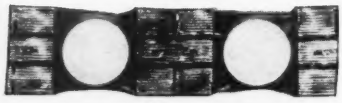
In the Luxor Gift Box delicate finishes are guarded with KIMPAK



The contents of Mennen's "Gift Box for Men" are protected with KIMPAK

IVERS-LEE *NOW* PRESENTS

A COMPANION PACKAGE TO SANITAPE EACH IS IDEAL FOR ITS PURPOSE



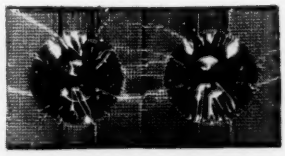
A Sanitape Tablet Package

Sanitape is a method of packing tablets hermetically in moisture-proof air-tight pockets, in a folded strip of paraffine-coated paper or moisture-proof transparent cellulose.

This is an ethical, economical, sanitary, modern form of packing tablets and is now used extensively by leading houses for professional samples and sale packages.

We are equipped to pack in Sanitape and return the tablets to you or our Service Department will, in addition to Sanitaping, handle the assembly of the entire package ready for sale or sample distribution.

We will be pleased to send samples and quotation on request.

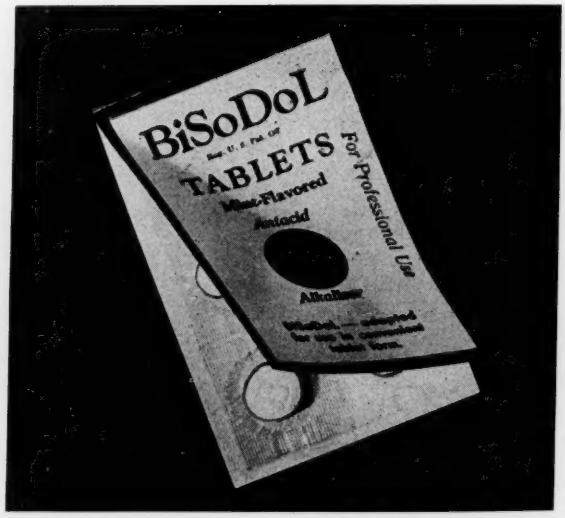


A Sealtite Capsule Package

The Sealtite package is created by automatically welding two pieces of heat-seal moisture-proof transparent cellulose together, with the capsule enclosed in the unsealed portion of the package. It is done in such a manner that the heat never comes in contact with the gelatin capsule and the product is hermetically sealed in an attractive package of one or more units.

This is an inexpensive sanitary package, in fact the only package in which gelatin capsules can be automatically packed so that the consumer can carry one or more in a hand-bag or pocket with safety.

Our Contract Department is equipped with Sealtite machines where your capsules can be packed and sent to you in bulk or the entire package assembled ready for sale or sample distribution.



Ivers-Lee Company

215 Central Avenue **Newark, New Jersey**

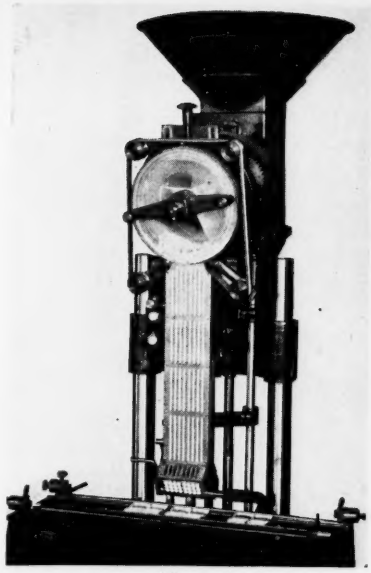


Fig. 1

In FIGURE 1, we show a machine equipped with a vacuum feed for the filling of Aspirin tablets in dozen packets. The range of this machine depends entirely on your rate of production. Feeding attachments can be supplied to handle 3, 6, 12, 24 or 30 tablets in one operation and places them directly in the container —so closely that it is impossible to duplicate Ivers-Lee filling precision by hand methods. The speed of this machine is directly variable to either number of packages per minute, or tablets per package. The machine demonstrated is handling two packages of 12's in each operation and has a speed of 80 to 100 packages per minute.

FIGURE 2 shows the same Universal Tablet Counting and Packaging machine equipped with gravity feeding mechanism and designed for use where bulk filling is required into bottles, boxes, vials or bags. This machine will also count and fill sealed capsules.

The speed of filling varies with the number of tablets per package.

At 100 tablets per package, the speed is 45 filled units per minute. As the number of tablets per package is decreased, the speed increases up to 130 units per minute.

This machine will line up with your high-speed labelers, cappers and cartoners, working up to 100-130 packages per minute.

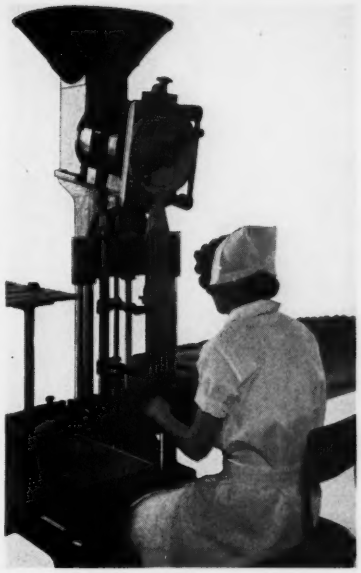


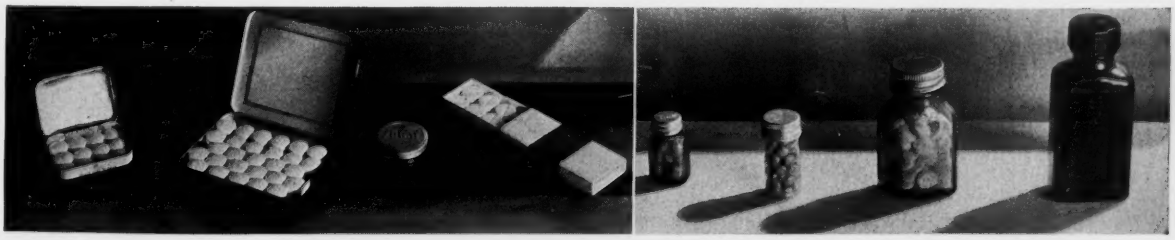
Fig. 2

Bottles, Tins, Slide Boxes or Cartons Filled Speedily, Economically, Accurately

with

UNIVERSAL Tablet Filling Machinery

The Ivers-Lee Universal Tablet Counting and Packaging machines will handle with equal facility coated or uncoated tablets. Various shapes such as oval, round or bean shaped products offer no hindrance to the perfect operation of these machines.



Ivers-Lee Company

215 Central Avenue Newark, New Jersey

AUTOMATIC FIBRE CAN PRODUCTION MACHINERY

Better packages at lower costs

THE KNOWLTON AUTOMATIC LAMINATED TUBE WINDER produces fibre can bodies or tubes of rectangular, round or irregular shapes, using paper stock fed from rolls.

Attractive lithographed labels are applied automatically by a labeling device. This is done during the process of winding, thus eliminating a later labeling operation.

THE SPIRAL WOUND FIBRE CANS made on the KNOWLTON MODERN SPIRAL WINDER are so accurate in both diameter and cut length, and so inexpensive, that Manufacturers and Merchandisers are substantially lowering their packaging and production costs by its use.

Automatic Fibre Can Equipment
Spiral Tubewinders (Automatic Cutoff)
Paper Box Machinery
Semi-Automatic Fibre Can Equipment
Spiral Corewinders (Multiple Cutoff)
Container Machinery (Corrugated & Solid Fibre)

M. D. KNOWLTON CO.

ROCHESTER, N. Y.

NEW YORK, 203 WOOSTER ST. CHICAGO, 127 S. PEORIA ST.

KEP-ARK INC

AUTO-CHROME
THREADED BOTTLE AND JAR CAPS

ALL SIZES — ALL FILLERS — ALL COLORS

PLAIN — LITHOGRAPHED — EMBOSSED

ABSOLUTELY AND WITHOUT QUESTION THE FINEST, MOST ECONOMICAL CAP EVER PRODUCED.

462 BOYLSTON ST., BOSTON, MASS.

MICHIGAN CARTONS

Products of The Quaker Oats Company have been packaged in Michigan Cartons for over twenty-five years. Here is surely concrete evidence of uniform quality as revealed in accuracy of printing detail, precision and uniformity of size which is so essential for the operation of high-speed packaging machinery.

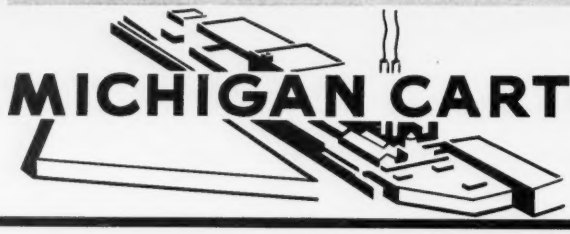
The most complete and modern facilities are available for producing these quality controlled cartons.

Michigan Carton Co. will give your carton problems experienced and constructive thought based on a quarter century of service to some of the country's most successful merchandisers.

THE PRINTING IS SUPERVISED BY EXPERTS

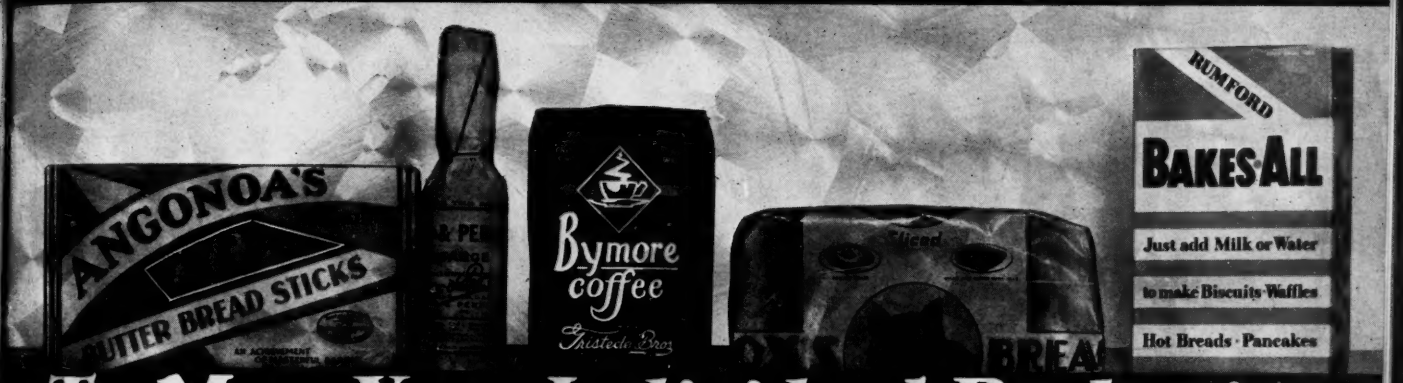
THE QUALITY OF THE BOARD IS NUMERICALLY CONTROLLED

Feel free to consult us regarding any phase of design or manufacture. We shall be glad to advise on improving your present cartons, create new ones, or quote on your requirements.



MICHIGAN CARTON CO.
BATTLE CREEK
MICHIGAN

130 Riegel Papers Simplify the Selection of Exactly The Right Sheet To Meet Your Individual Packaging Requirements



RIEGEL PAPERS

This portfolio contains samples and technical data on sixteen of the most popular Riegel lines. Our complete group of 130 represents the largest number of packaging papers produced by one manufacturer today. This broad field of experience can be a valuable aid to you in selecting the right paper for your packaging needs from the combined standpoint of sales, production and economy.

SIXTEEN POPULAR RIEGEL PAPERS WITH PACKAGING DATA ON THEIR PHYSICAL QUALITIES

The following table shows the comparative qualities of the papers contained in this portfolio. In addition, there are other general advantages applying to all Riegel lines. They work rapidly and economically on automatic packaging machines. They will not dry out and crack. They are furnished in sheets or rolls of any size. They are correctly priced.

Key Number	Grade	Std. Wts. (per 500 sheet rm. of size 24x36)	Transparency	Resistance to: Grease or Oil	Resistance to: Moisture	Sealing: Heat or Glue	Other Qualities	General Use
1	Riegeline	20-25-30	High	High	Slight	Glue	Twists well. Very economical. Pliable	Outer carton wraps and bags. Bottle wraps.
2	Riegelite	23	High	High	High	Heat	Low-cost. Pliable. Crackproof	Outer wraps and bags for food products needing moisture resistance or retention.
3	Greaseproof Parchment	25-30-40-60	None	High	Slight	Glue	Grease cannot penetrate or spot	Ham and bacon wraps. Carton lining. Xmas cards. Corrugating.
4	Laminated Riegeline	36	Moderate	High	High	Glue	Inner wax layer gives moisture protection without surface wax	Carton lining. Pipe tobacco packages. Moisture-proof bags.
5	Amber Glassine	25-29	None	High	Slight	Glue	High grease resistance at low cost	Carton liners. Coffee bag lining.
6	Bleached Glassine	25-30-40-50	Slight	Moderate	Slight	Glue	Cheapest bleached Glassine	Carton lining. Low cost bags and envelopes not needing transparency.
7	Colored Glassine	25(7 colors)	None	High	Slight	Glue	Light-proof	Corrugated padding. Bottle and package wraps.
8	Opal Glassine	25-30-40	Slight	High	Slight	Glue		Bag and cotton lining.
9	Embossed Glassine	25(5 designs)	Slight	High	Slight	Glue	Decorative appeal	Bags, envs. and outer wraps.
10	Bleached Glassine (Waxed 1 side	27	Slight	High	Moderate	Both		Wax lined bags. Carton lining.
11	Waxed Amber	29-33	Slight	High	High	Heat	High moisture resistance at low cost	Carton liner for crackers,
12	Manila Waxed Sulphite	35	Slight	Slight	Moderate	Heat		Carton lining.
13	Transp. Waxed Sulphite	24-30-34	High	Slight	Moderate	Heat		Carton wraps.
14	Waxed Bleached Glassine	29	Slight	High	High	Heat	Novelty and decorative appeal	Carton liners. Box covers. Xmas cards. Counter Displays.
15	Crystallon	—	None	Slight	None	Glue		
16	Diafane	20-25	High	High	High	Both	Hard glossy surface. Not waxed	Doughnut wraps. Package wraps. Env. windows.

PAPERS OR CONTAINERS NOT SAMPLED HEREIN, BUT RECOMMENDED BELOW

17 Bag Lining of No. 5 or No. 8
18 Dry Waxed Sulphite
19 Ordinary Waxed Sulphite
20 Printed Opaque Waxed Sulphite
21 Window-front Bags
*22 Vegetable Parchment
*23 No. 6 Laminated to Foil
*24 Unlined Tins
25 Laminated Sulphite Bag
26 Celoglaze Side Stock
*27 Foil
28 No. 6 Laminated like No. 4

*Not manufactured by this company. Information gladly furnished.

A LIST OF PRODUCTS WITH PAPERS RECOMMENDED FOR THEIR PACKAGING

(All Recommendations Based on Similar Use by Recognized Manufacturers)

Numbers refer to Items listed above. Recommendation indicate grade used, although frequently in a weight different from the sample herein.

	Packages: Inner Wraps	Packages: Outer Wraps	Bags or Envelopes	Special
Bacon	6-8	1-10	—	1-3-16
Bottle Wraps	—	1-7	—	—
Box Covers	—	15	—	—
Box Leaves	1-7-9-15	—	—	—
Box Lining—Fancy	9-15	—	—	—
Greaseproof	3-5-6-8	—	—	—
Moistureproof	10-11-14	—	—	—
Bread	—	—	—	20
Bread Sticks	—	1	—	1-2-6
Butter	—	—	—	22
Cakes and Cookies	—	2	1-2-4	—
Candy Bars	6-19-27	1-2-13	—	—
—Penny	—	1-6	—	—
Candy—Boxed	9-13	1-16-19	—	—
—Bulk	—	—	—	19-20
Candy Cups	—	—	—	7
Cereals	14	2-13-14	—	—
Cheese	—	27	—	23
Cigarette Cartons	—	12-13-14	—	—
Cocoa	8	—	—	24
Cocoanut—Shredded	14	2-13	—	—
Coffee—Bags or Cartons	5-8	—	—	17
Collars—Soft	—	—	1	—
Corrugated Padding	—	—	—	3-7
Cough Drops	—	2-12-13	2-4	—
Crackers—Paper Containers	3-11	1-2-13	1-2-4	—
—Tin Containers	3-14	1	—	—
Dates	14-19	2	—	—
Doughnuts	—	1-16	1-16	—
Drugs	3-4-11-19	1-7-9	1-6	—
Envelopes—Sampling	—	—	1-2-6	—
Envelopes—Window	—	—	—	1-16
Flour—Prepared	10	—	—	—
Frozen Confections	—	27	9	—
Frozen Fruits	16	1	—	—
Fruits—Dried	12	1	4	—
Gelatin Powder	25	—	25	—
Greeting Cards	—	—	—	3-15
Ham—Whole, Cured	—	3-9	—	—
Health Foods	3-19	1-2-13	—	—
Ice Cream	22	6	—	—
Insecticides	8-19	1-7-13	—	—
Lard	—	—	3	—
Macaroni and Noodles	18	—	1-4	21
Napkins—Paper	—	1-9	—	—
Oleomargarine	3	—	—	—
Pies	—	—	1-21	—
Potato Chips	11-14	1-13	2	—
Pretzels	10	1-2-6-13	1-4	—
Rice	6-10	1	—	—
Rolls—Pan	—	2	2-4-6	20
Shirts	—	1	1-21	—
Soap—Cake	6-8	1	—	—
—Chips and Powder	12-14	13	—	—
Spices	10-12-14	1-2-13	—	—
Stocking Wraps	—	1	9-15	—
Sugar	14-19	—	—	—
Tea	10	1-2	—	—
Tobacco—Chewing	4-18-23	1-16	—	—
—Pipe	4-18-23	1-16	—	—
Toothpaste	—	1-16	—	—
Window-Front Bags	—	—	—	26

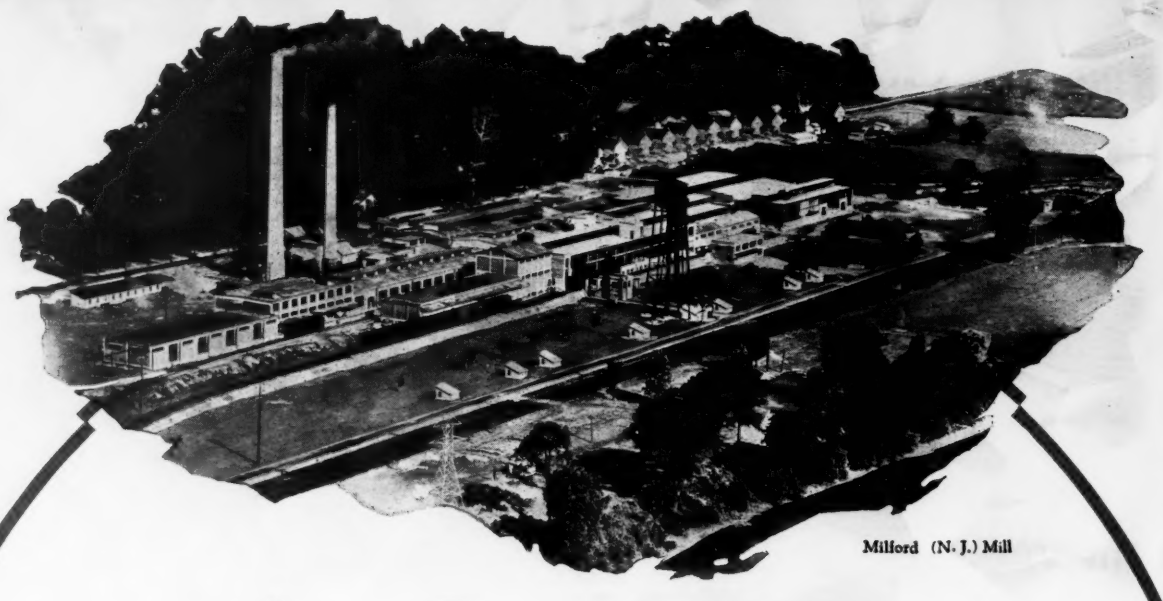
RIEGEL PAPER CORPORATION

342 MADISON AVENUE, NEW YORK

Liberal Working Samples of any of these Papers sent without charge. Please state Name and Number of Paper, and Size of Sheet desired.

A SPECIAL SELECTION FROM
OUR 130 PACKAGING PAPERS

KEY NUMBER–
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16



Milford (N. J.) Mill

An Invitation

There are over 130 Riegel Papers made to fit the specific packaging needs of various industries. If you're faced by some production problem, bringing out a new package, dressing up an old one, or just frankly trying to cut your packaging costs . . . write us your story today. To manufacturer, printer or advertising agency we offer unbiased advice based on experience and research work in many fields.

There is no charge, of course.

RIEGEL

PAPER CORPORATION

342 MADISON AVE., NEW YORK

THIS IS PRINTED ON RIEGEL'S CRYSTALLON—HEAVYWEIGHT—WHITE

Shown above are: (1) Mundet metal top corks, combining the attractive appearance of a metal lithographed or embossed closure with the perfect sealing qualities of cork.

(2) A Mundet Cork Closure with solid molded flange crown, and (3) with molded shell flange. (4) Mundet's molded screw cap—a handsome closure for quality products.

★

TO redesign or not to redesign—**that is the vital question. But whatever the answer, it will pay you to investigate Mundet Closures. They can improve and modernize your present containers at little or no additional cost . . . without the expense of special machinery. For new containers, Mundet Closures are the final touch of packaging perfection. Their economy is in striking contrast to their quality, appearance and construction. Made in many sizes, styles and colors. Ask for samples and full particulars.**

MUNDET CORK CORP., BROOKLYN, N. Y. « « « BRANCHES IN ALL PRINCIPAL CITIES

MAKERS OF HIGH GRADE CLOSURES AND CROWNS

SPECIALISTS IN PACKAGE LITHOGRAPHY

The lithographic process is particularly suited to the manufacture of labels, cartons and displays. Yet few lithographers are equipped to provide a service keyed to the needs of the packagers.

Michigan Lithographing Company is so equipped. It boasts a long record of successful experience, working for the most particular of packagers. It maintains a well-staffed art and design department, able to originate or to execute your own designs. Its plant is among the best equipped in the country . . . . large enough to produce millions of impressions daily . . . . yet geared to the maintenance of constant quality.

Before you specify or purchase labels, cartons, stickers, inserts, folders or displays . . . . Consult Michigan.

MICHIGAN LITHOGRAPHING COMPANY

GRAND RAPIDS, MICHIGAN

LUSTEROID CONTAINERS'

MANY EXCLUSIVE ADVANTAGES

have won for them wide acceptance among manufacturers of pharmaceutical, drug, cosmetic and other products to whom attractive appearance, on the shelf and in use, and ease of packaging and shipping are important. If the advantages listed below are likewise important to you . . . write us for samples or send us a sample of your present package. We will return your product repackaged in a suitable LUSTEROID CONTAINER.

1. LIGHTWEIGHT—LUSTEROID Containers are one-fifth the weight of glass.
2. UNBREAKABLE—LUSTEROID will not crack or break; no protective packaging necessary.
3. DECORATED IN COLORS—LUSTEROID calls for no expensive labelling or labels.
4. LOW COST—Packing, labelling, breakage and transportation savings make LUSTEROID containers an economical package.

LUSTEROID CONTAINER COMPANY, INC.

FORMERLY LUSTEROID DIVISION OF THE SILLCOCKS-MILLER CO.

10 PARKER AVENUE, WEST SOUTH ORANGE, NEW JERSEY

VIALS, TUBES AND SPECIALTIES

JOHNSON AUTOMATIC SEALER COMPANY, Ltd.

BATTLE CREEK, MICHIGAN

NEW YORK OFFICE: 30 Church St., New York City
LONDON OFFICE: Messrs. C. S. Du Mont Ltd., Windsor House, Victoria Street, London, England
PACIFIC COAST OFFICE: W. J. Holder, 3730 Scott St., San Francisco, Cal.

PRODUCTS

All types of automatic packaging and wrapping machinery, including the following ten standard Johnson machines and adaptations or combinations of them:

1. Carton Feeder
2. Bottom Sealer
3. Liner (Paper—All Types)
4. Gross and Net Weight Scales
5. Liner Triple Fold Closure
6. Carton Top Tucker
7. Carton Top Sealer
8. Wrapper, Wax, Plain
9. Wrapper, Located Panel
10. Wrapper, Transparent Cellulose

RESOURCEFUL ENGINEERING SERVICE

Johnson engineers have been first to solve many of the toughest problems of the automatic packaging industry. The Johnson motto is "if it can be wrapped by hand, it can be packaged on a Johnson machine." To be sure that you are getting the most effective and efficient equipment—engineered exactly to the particular job and with new developments where standard units are not exactly suitable—send your inquiries to Johnson Automatic Sealer Company, Ltd. The following are particularly characteristic of Johnson equipment:

Greater Capacity—Johnson machines operate at the highest speeds consistent with faultless packaging—and these speeds are frequently higher than obtainable in other similar equipment. The savings to the buyer of faster Johnson equipment are obvious and important—smaller equipment investment, floor space is reduced, maintenance is less, etc.

Flexible Equipment. Often Johnson machines, especially wrapping machines, can be adjusted to the wrapping of a whole range of packages in groups of related sizes. Thus fewer machines are needed to wrap a company's varied output—of particular value to those that market a varied line.

Unusual Shapes. Particular distinction and individuality has been given certain packages by their unusual shapes. Yet Johnson machines were able to form, fill, close and wrap these unusual packages at the usual speeds, or better.

SIGNIFICANT JOHNSON DEVELOPMENTS

1. The Triple-Fold Closure. With this closure, a package liner is made practically air-tight without the use of glue or staples and entirely independent of the carton and its closure or seal. This closure enables the customer to reclose the inner container exactly as it was originally closed, thereby keeping the product fresh on the consumer's shelf. Machine operates over 60 per minute. Triple-Fold Closure makes the tuck-top carton particularly usable.

2. The Located Panel Design Wrapper. By a perfected application of the Electric Eye, Johnson has assured exact register of wax wrappers in printed panel designs. Outstanding features of this wrap are its attractiveness and economy. The design is printed on waxed paper in rolls in all its colors just as it would be on the carton. The machine positions the front, back and side panels, and wraps with the design correctly located. The gloss of waxed paper adds new brilliance to the colors. And the wrapper is, of course, an excellent protection against loss of moisture and freshness.

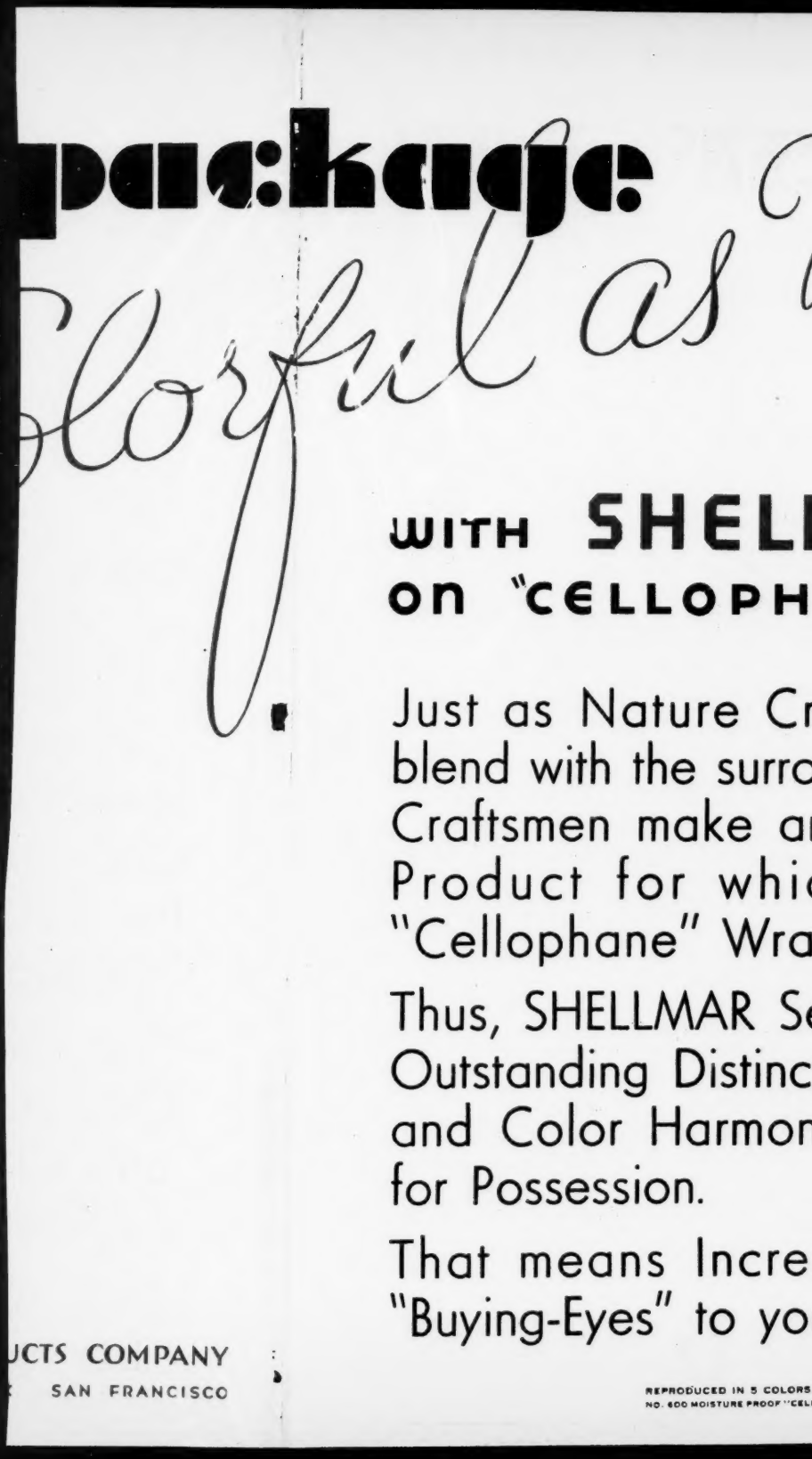
3. The 1935 Ideal Package. To those who market food products and others that stale, Johnson particularly recommends its "ideal package," which enables the user to feature "freshness until the last portion is used." This package has: a liner with Triple-Fold Closure, a tuck-top carton and a Johnson Located Panel Design Wrapper.

VARIOUS JOHNSON WEIGHERS HANDLE:

Salt	Soap Powder	Cornstarch
Soda	Flour	Macaroni
Rice	Coffee	Gelatins
Corn Flakes	Tea	Sugar
Soap Flakes	Mothballs	

The Above Packages Are Handled on the Following Johnson Machines (See Numbers under "Products," upper left).

A—1, 2, 3, 5, 7.	F—9.	K—2, 4, 7.
B—1, 2, 4, 7, 8, 9.	G—10.	L—8.
C—2, 4, 7, 8.	H—10.	M—8.
D—9.	I—10.	
E—2, 7, 9.	J—10.	


package
Glorified as
WITH SHELL
ON "CELLOPH
Just as Nature Cr
blend with the surro
Craftsmen make a
Product for whi
"Cellophane" Wra
Thus, SHELLMAR Se
Outstanding Distinc
and Color Harmon
for Possession.
That means Incre
"Buying-Eyes" to yo
UCTS COMPANY
SAN FRANCISCO
REPRODUCED IN 5 COLORS
NO. 600 MOISTURE PROOF "CEL

H E L L

s Nature"

IELLMAR PRINTING
OPHANE" WRAPPINGS

ure Creates Color Effects that
e surroundings, so do SHELLMAR
ake an individual study of each
which they create Printed
" Wrappings.

MAR Service assures YOU of an
Distinction, with Balanced Design
armony to Stimulate the Desire
n.

Increased Sales by Directing
to your package.

DUCED IN 5 COLORS BY SHELLMAR'S PATENTED "COLODENSE" PROCESS
MOISTURE PROOF "CELLOPHANE" SUPPLIED BY DU PONT CELLOPHANE COMPANY, INC.

L M A R

UM

XUM

the PERFECT CLOSURE

Vacuum Sealing Service

Leading food packers recognize the definite food preserving and sales advantages of having their products vacuum sealed with WHITECAPS . . . WHITECAPS are the perfect closure for Vapor or Mechanical high speed vacuum packing. It provides maximum security for the product—yet is the simplest closure to open . . . White Cap Vapor and Mechanical Vacuum High Speed Machines are offered to meet all production requirements from the smallest to the largest.

Complete engineering service available for any packaging problem.

WHITE CAP COMPANY

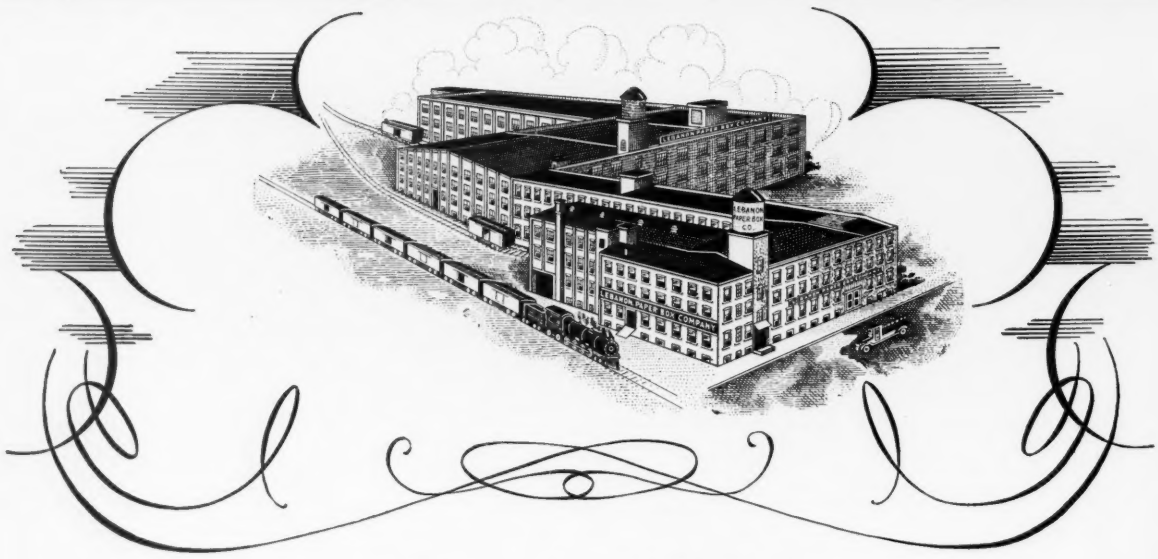
New York CHICAGO London

TO OPEN
Pry Up

TO RESEAL
Press On

W H I T E C A P S

XUM



8½ ACRES

DEVOTED TO MODERN BOX CRAFT

FINE WORKMANSHIP ★ MODERATE PRICES ★ ORIGINALITY

SET-UP	**BOXES**	CIGAR
FOLDING		INSET
BRIGHTWOOD		SILHOUETTE
HAND MADE		VELOUR PRINT

LEBANON PAPER BOX CO.

LEBANON, PA.

NEW YORK OFFICE, 51 MADISON AVE.
NEW YORK WAREHOUSE, JERSEY CITY, N. J.

THE CRUCIAL MOMENT IN MODERN PACKAGING

Selecting the covering is the most important step in the creation of a package. In fact, a beautiful covering can make an attractive package out of a match box. Be careful--choose right--the success of a package depends upon the covering as well as the design!

Ready for the Dress

USE CELLUSUEDE FOR LUXURY

Beauty is only skin deep! It's the covering on your box that makes it attractive! And, no matter how you plan to put the name on the package, the covering is still the background and is the basis of the design. Give it the *lure of leather* with Cellusuede--the modern suede-like cover that costs no more than any good cover paper. Colors! Seventeen of them -- all modern pastel shades giving you extraordinary freedom of choice. The Cellusuede Sample Book and sample sheets for creative purposes are yours for the asking. Send for this material today--put refinement into your new package that will reflect the high quality and character of your product!

MOSINEE *Cellusuede*

MADE BY MOSINEE PAPER MILLS CO.
MOSINEE, WISCONSIN

"There she is, boys! How do you like her?"

"Some class, I say!"

"Now, if we can get a cover paper that's as good as the design -- something that will add to her good looks---"

"I've got it -- CELLUSUEDE!"

"That leather-like covering?"

"Sure, that's it!"

"Oh boy, I believe that will do the trick! Leather--that's it! But how will we print the name?"

"Print it, emboss it, put anything you want on it, any way you want. Cellusuede can take it."

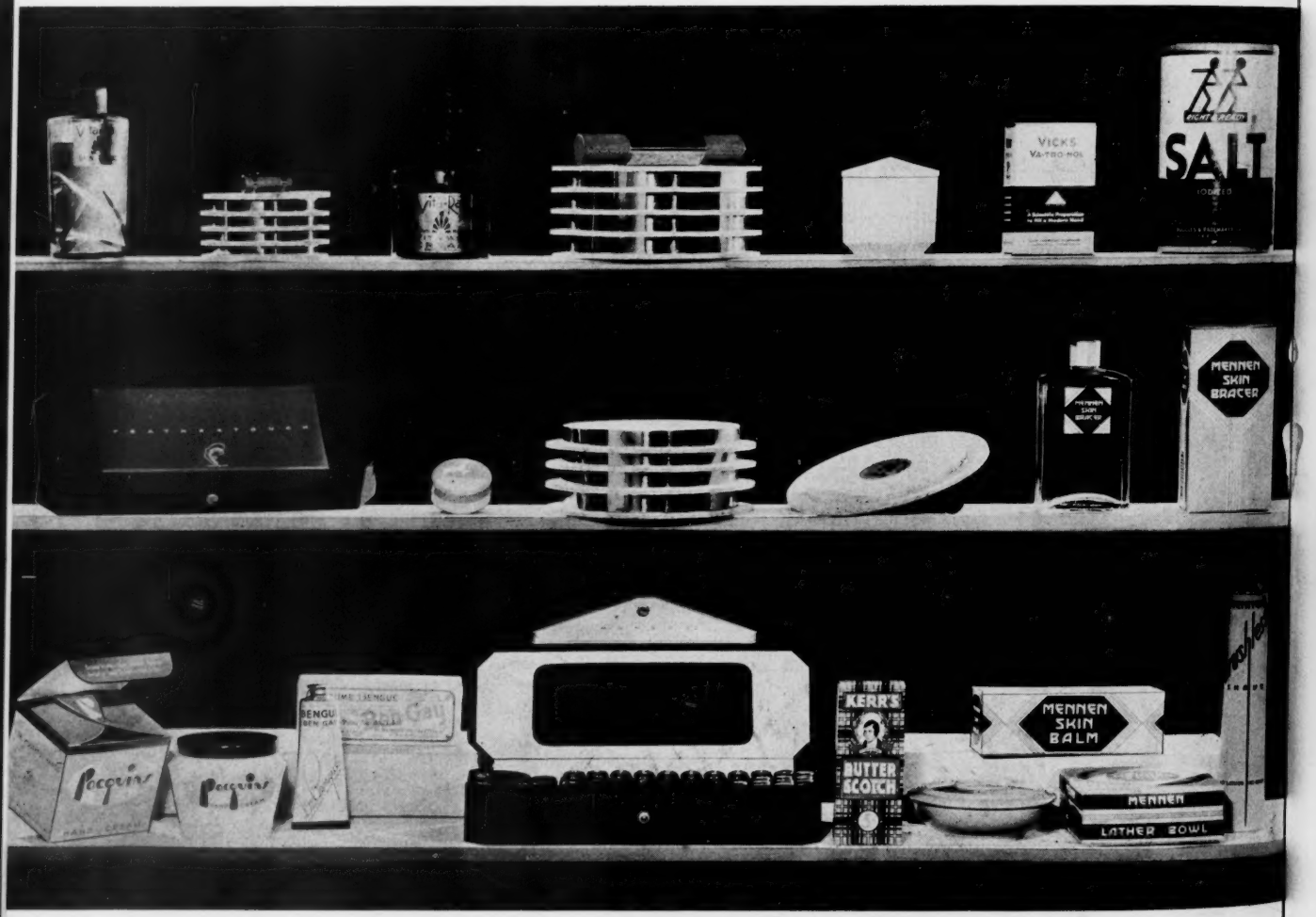
"How about color?"

"Cellusuede is made in 17 colors, all modern shades. We can get anything we want."

"Get the Cellusuede sample book and some sample sheets. I think this is going to be a knock-out!"

E D W I N H. S C H E E L E

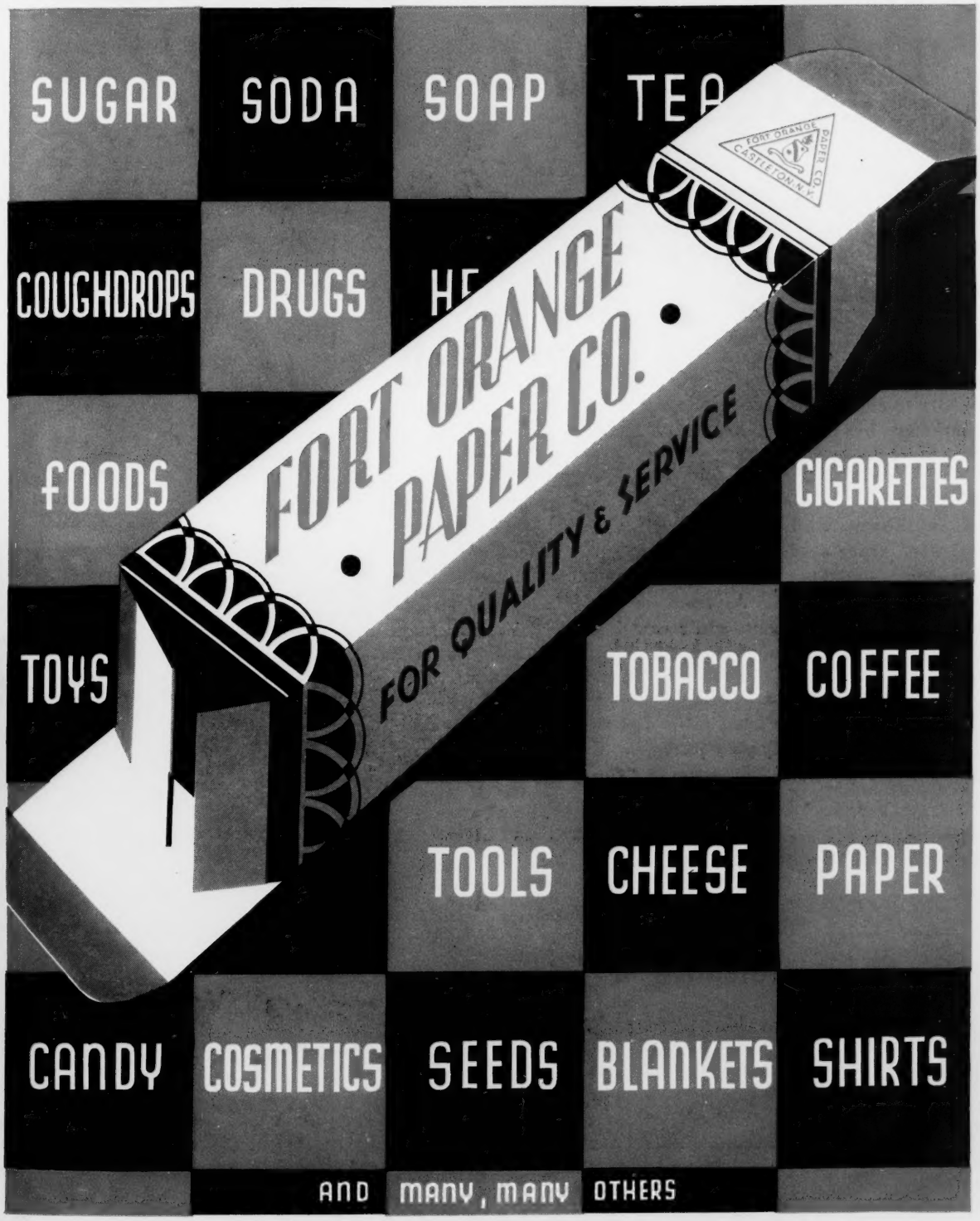
D E S I G N S P A C K A G E S



A T 4 1 9 F O U R T H A V E N U E N E W Y O R K

XUM

FOLDING BOXES for YOUR PRODUCT



475 FIFTH AVENUE
NEW YORK CITY

FORT ORANGE PAPER CO.
CASTLETON ON HUDSON, N. Y.

STATLER BLDG.
BOSTON, MASS.

The Demand For ENGRADEL

TRADE MARK
U. S. PATENT NO. 1803836

TRANSPARENT LABELS IS ON THE INCREASE

In the three short years in which they have been available, Engradel Transparent Labels have proven their ability to add beauty and sales appeal to dozens of containers, marketed by many of America's leading perfume, cosmetic and toilet goods houses.

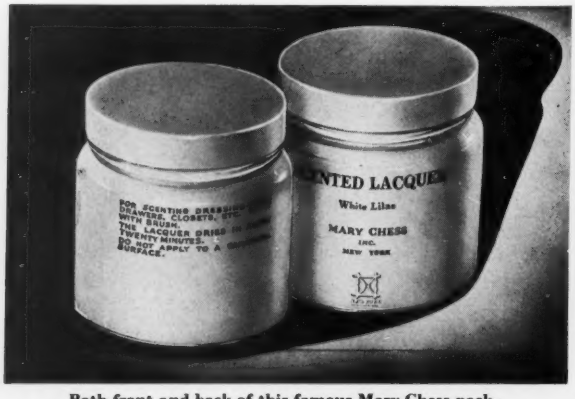
They may be easily applied to the front or back of any shape of containers, and cling around corners without bulge or wrinkle. Once applied, they become an integral part of the package . . . sticking under even the most adverse conditions, without deterioration. As front or back labels they permit a full view of the contents while carrying the desired message, fully legible in any size of type.

Shown here are but a few of the more recent uses to which Engradel Labels have been put. Let us show you how much they can do to beautify your package. Write for full information and sample labels.

Hyman & Hyman and Antoine of Paris use Engradel Labels to carry directions for use of their products. Note the fine detail of lettering.

Michel Gourland uses an Engradel Label to reproduce, in black, the illustration used, in white, on their outer box.

The Lentheric trade mark is applied to their Plaskon talcum container by means of an Engradel Transparent Label.



Both front and back of this famous Mary Chess package carry Engradel Labels.

To adorn this beautiful package, Dimitry utilizes two Engradel Transparent Labels.

PALM, FECHTELER & CO.

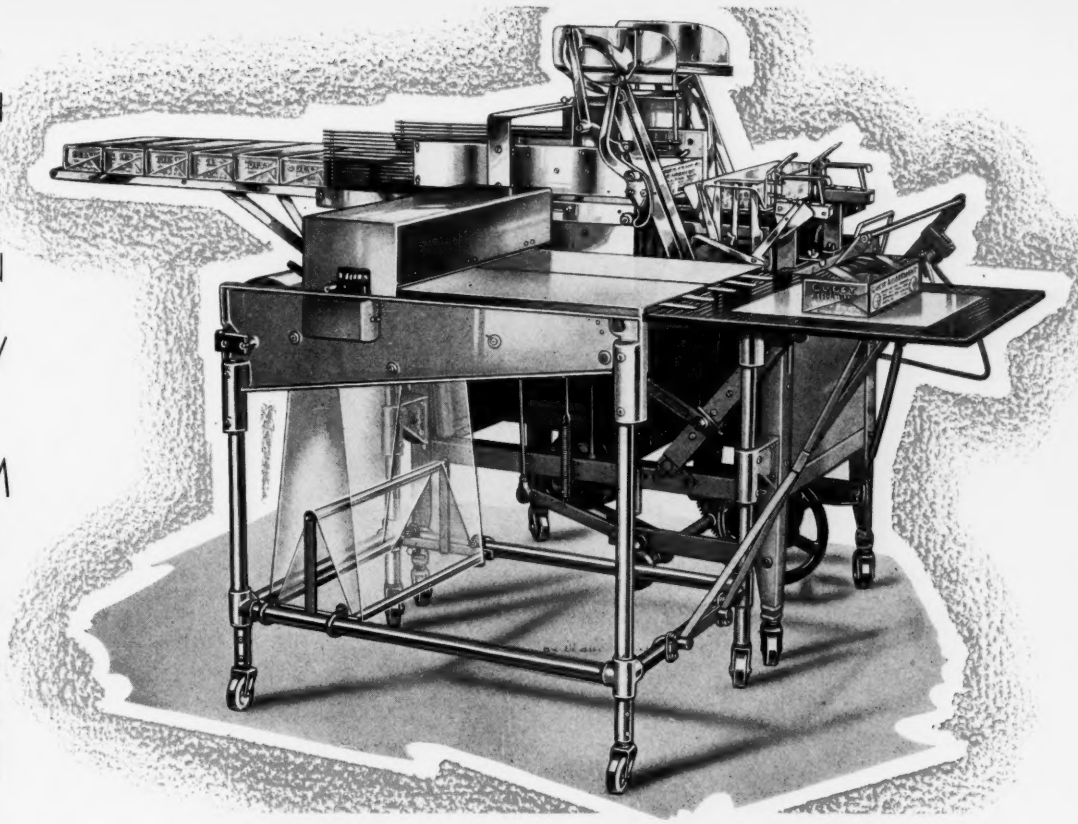
15 East 26th Street

EAST LIVERPOOL
OHIO

New York

5 South Wabash Ave.
CHICAGO

THE NEW MILLER



WRAPPER AND SHEETER

FOR BUILT-IN ECONOMY "Miller" Wrapping Machines

●

For over twenty years Miller has carefully aimed its efforts at lower packaging costs with gratifying success. Our achievement has been a wrapping machine outstandingly low in price, speedy of operation, and adjustable for an extremely wide range of packages. Above all, Miller equipment embodies ECONOMY in every letter of the word and s-a-v-e-s production dollars in quantities that pay for its small cost in far below average time.

★ The new Miller Sheet-Cutting Attachment, for example, reduces production expense as well as simultaneously solves two wrapping problems by synchronizing the sheet cutting and package wrapping operations. This makes it possible for the manufacturer to purchase wrapping material in its cheaper roll form, and in addition affords the convenience of placing one sheet at a time handily before the operator—a labor saving advantage.

MILLER WRAPPING & SEALING MACHINE CO.
14 South Clinton Street, Chicago

PACKOMATIC

PACKAGING MACHINERY

J. L. FERGUSON COMPANY, JOLIET, ILLINOIS

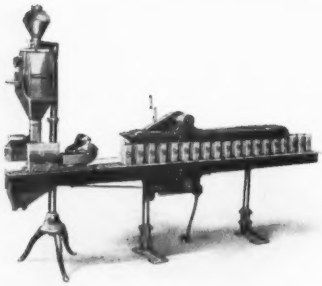
Branch Offices: NEW YORK CLEVELAND SAN FRANCISCO

Automatic Machines for all Packaging Purposes

CARTONS - BAGS - CANS - BOXES

Carton Forming machines
Carton Sealing machines
Automatic Net weight scales
Automatic Gross weight scales
Automatic Volumetric fillers
Automatic Lining machines
Cellulose Wrapping machines
Semi-automatic Net weighers
Semi-automatic Gross weighers
Container Sealing machines
Can Labeling machines
Coupon Inserting machines

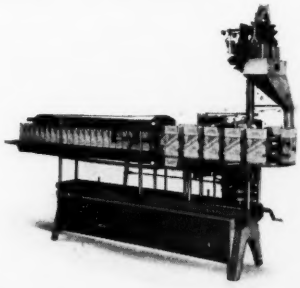
Packomatic machines are known from coast to coast for their reliable, efficient performance.



PACKOMATIC CARTON SEALER WITH AUTOMATIC WEIGHER

This unit is specially designed for short runs and a variety of carton sizes.

Furnished with automatic net weigher or auger filler. Exceptionally easy to adjust for different size packages. Speed: up to 30 per min.



PACKOMATIC CARTON SEALER WITH AUTOMATIC WEIGHER

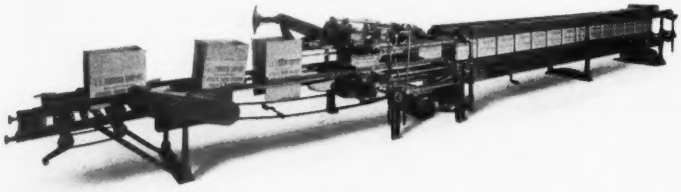
An automatic packaging machine rapidly adjustable for a wide range of carton sizes.

Tightly sealed packages of commercially accurate weights guaranteed at a speed up to 30 per minute. Only one operator required.

PACKOMATIC HAND GLUE CONTAINER SEALER

An easily and rapidly adjustable machine for carrying cases under compression. Adhesive is applied to inner flaps by the operator. An automatic trip controls the intermittently operated belts as the cases enter.

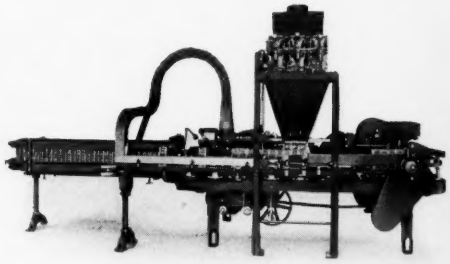
Furnished in any length and for any desired speed.



PACKOMATIC AUTOMATIC CONTAINER SEALER

For sealing both top and bottom flaps of paper containers simultaneously. The filled cases are automatically timed into machine from conveyor, bottom outer flaps opened, top inner flaps closed, adhesive spread on inner surface of all outer flaps and cases discharged between compression belts.

Furnished for any speed up to 25 or more cases per min.



PACKOMATIC CARTON SEALER WITH AUTOMATIC WEIGHER

For sealing bottom flaps of cartons, weighing and filling into three cartons simultaneously, and sealing top flaps. Convertible for different size packages. Guaranteed speed 60 or more per minute with only one operator.

PACKOMATIC

XUM

THIS LITTLE FOLDER TELLS YOU ALL YOU WANT TO KNOW ABOUT

EXCELLO
REG. U.S. PATENT OFFICE
RIBBON
Licensed under Patent No. 1,406,148

EXCEPT

. . . that the retailer gives preferred position to packages tied with EXCELLO RIBBON. EXCELLO RIBBON has sales power . . . plenty of it! This magnificent, lustrous ribbon will focus consumer attention upon your package. EXCELLO RIBBONS are bright, cheerful and rich in color . . . they are easy to tie and *extremely inexpensive*—so much so, that they add only a trifle to your packaging costs—but your sales appeal goes up ten-fold.

Write today to Freydberg Bros., Inc., 45 West 18th Street, New York, N. Y., for full information and sample yardage of the ribbons shown within this folder, or for other ribbons best suited to your needs. Or better yet, send a sample of your present package. We will return it to you attractively tied with EXCELLO RIBBON.

FOCUS consumer attention on your package!

EXCELLO
REG. U.S. PATENT OFFICE
RIBBON
Licensed under Patent No. 1,406,148

made of

Cellophane
TRADE MARK

Excello Ribbon
is made by

FREYDBERG BROS., Inc.
45 West 18th Street
New York City

XUM

THIS LITTLE FOLDER TELLS YOU ALL YOU WANT TO KNOW ABOUT

We Have The Correct Ribbon for Your Package!

THE samples shown herewith are only an indication of our entire line. "EXCELLO" ribbon is made in hundreds of patterns, widths, and color combinations.

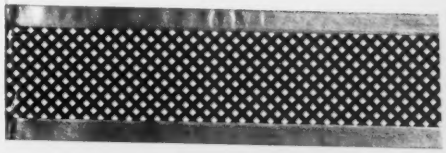
Whether you pack hams, candy, cake, cosmetics or any of the countless articles sold over the retail counter!

Whether your package is square, round, oblong—large or small—***we have the correct "Excello" ribbon for it!***

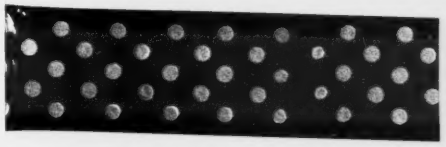
May we send you samples?

FREYDBERG BROS., Inc.
45 West 18th St.
New York City

Waffle
Du Tone
made in
½" and ¾"
and in many colors



Polka Dot
Excello
½" and ¾"
made in 15 colors



Star
Cellofoil
made in
3/16" and ⅜"
and in many colors

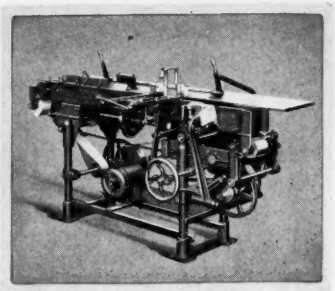
#8000
Threaded
Cellophane Ribbon
made in widths
from ¼" to 2"
and in 15 colors

Star
Excello
½" and ¾"
made in a
variety of colors

Scotty
Excello
½" and ¾"
made in a
variety of colors

Plain Excello
made in all widths
from ¼" to 3"
and in 15 colors

★ If you use cartons, you will be interested in the multiple savings which Peters Package Forming and Package Closing Machines afford. Whether your production is small or large, there are Peters Machines particularly fitted to your needs . . . machines providing (by actual record) savings as high as $3500 a year over hand carton forming and closing operations. Therefore we say—



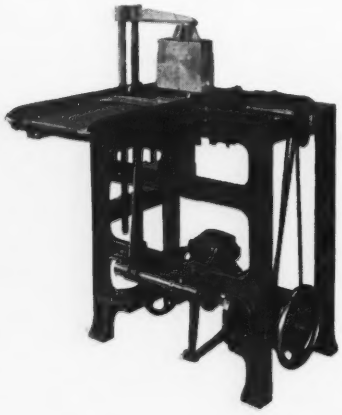
LARGE PRODUCTION OR SMALL
investigate these machines!

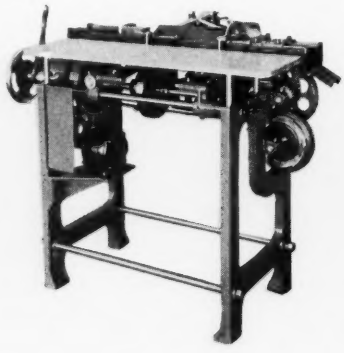
★ ★ ★

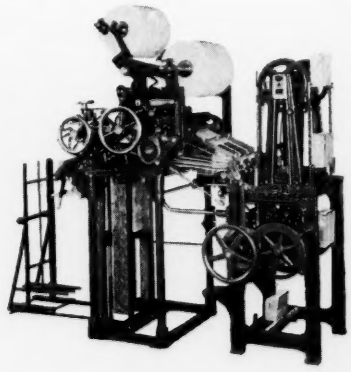
Peters Junior Forming and Lining Machines form and line carton shells automatically, operating at a rate of 2000 to 2500 per hour. In spite of their high speed, they require but a single operator. Being readily adjusted, they handle a wide range of sizes, change-over from one size to another being made in a few minutes.

Peters Junior Folding and Closing Machines are fully automatic; require no operators. They fold and close the filled cartons uniformly and neatly at the same high rate of speed as the Junior Forming and Lining Machines. They are in use today, in conjunction with the Junior Forming and Lining Machines, in important plants throughout this country and abroad and have everywhere given an unusually fine record of labor saving, trouble-free production at an extremely low operating cost.

Peters Senior Forming and Lining Machines and Peters Senior Folding and Closing Machines (see illustration above) do the same work as the Junior Models . . . but, with the automatic feeding attachments, provide a speed of 3300 to 3600 per hour. In many plants they have replaced from five to seven hand operators . . . saved as much as $3500 annually.



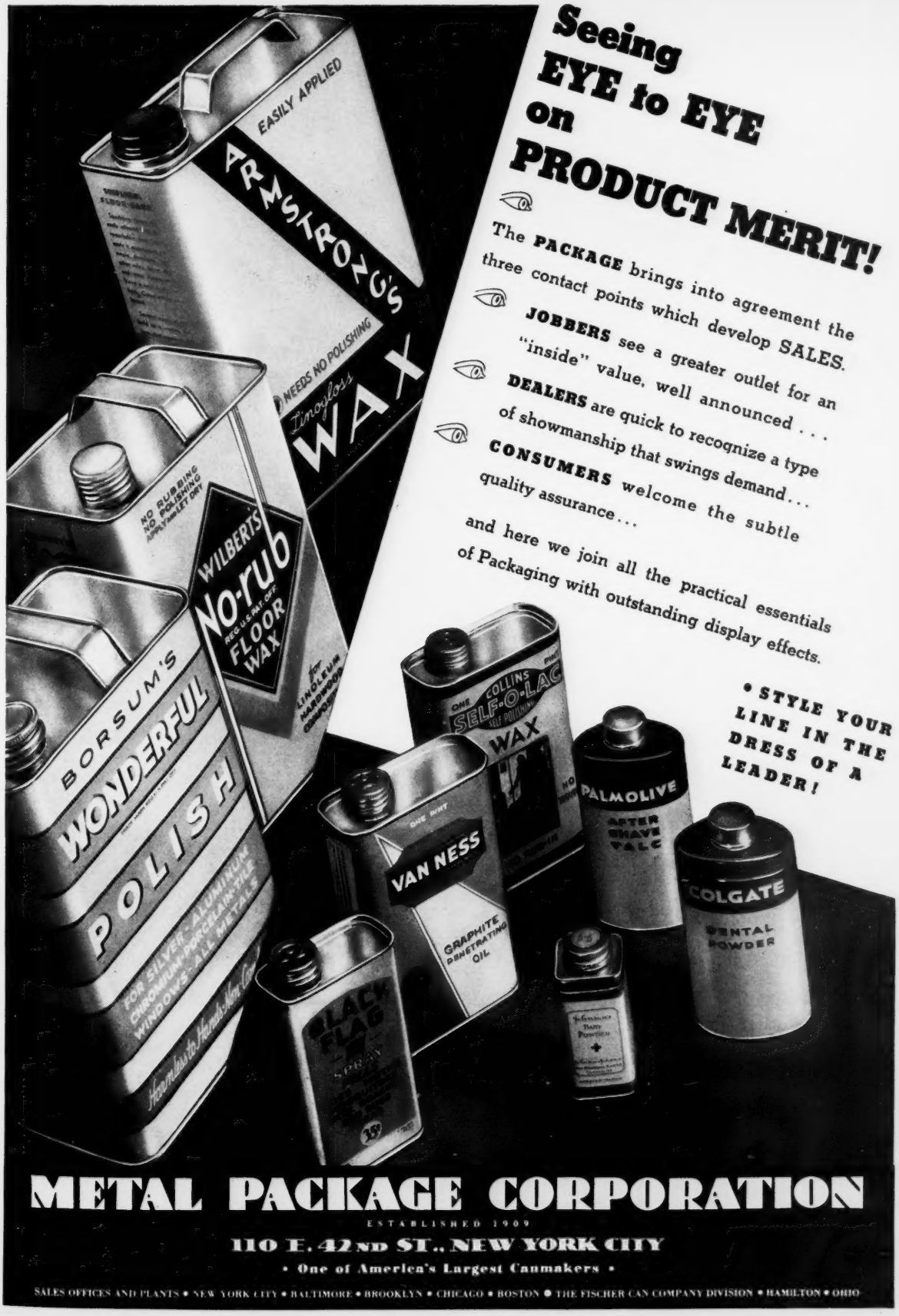




PETERS MACHINERY COMPANY

GENERAL OFFICE AND FACTORY 4700 RAVENSWOOD AVE.

CHICAGO, U.S.A.



Seeing EYE to EYE on PRODUCT MERIT!

The **PACKAGE** brings into agreement the three contact points which develop SALES.

JOBBERS see a greater outlet for an "inside" value, well announced . . .

DEALERS are quick to recognize a type of showmanship that swings demand . . .

CONSUMERS welcome the subtle quality assurance . . .

and here we join all the practical essentials of Packaging with outstanding display effects.

• STYLE YOUR LINE IN THE DRESS OF A LEADER!

METAL PACKAGE CORPORATION

ESTABLISHED 1909

110 E. 42ND ST., NEW YORK CITY

• One of America's Largest Canmakers •

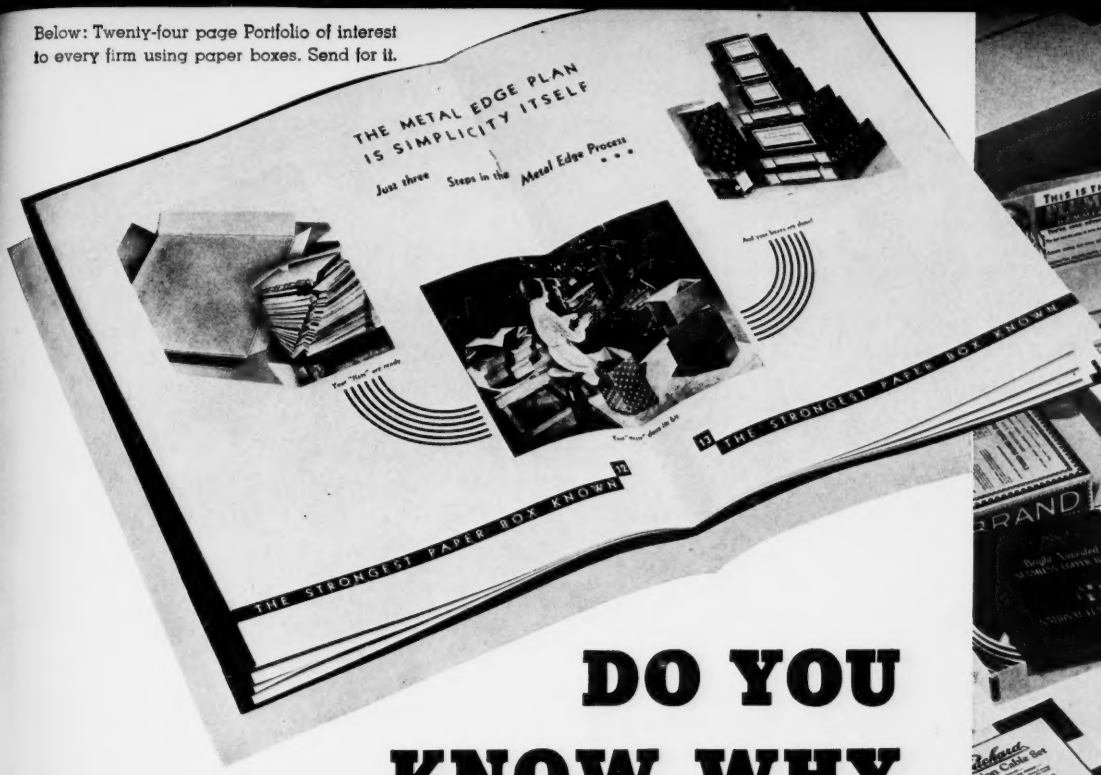
SALES OFFICES AND PLANTS • NEW YORK CITY • BALTIMORE • BROOKLYN • CHICAGO • BOSTON • THE FISCHER CAN COMPANY DIVISION • HAMILTON • OHIO

A nickel's worth of Gum Drops goes modern

The old-fashioned nickel bag of gum drops of youthful memory has been transformed into a glittering modern package, handsomely printed, thoroughly sanitary. Yet both the old and the new are basically the same . . . both are Union Bags. They represent the great progress bags have made as modern packages. Today thousands of different products go to market in modern Union Bags. Automobile parts and confections; coal and insecticides; foods of all kinds and blankets; bath salts and lingerie . . . and many other things are now glorified and protected by Union Bags. In cellophane, in dainty, linen-like paper, in the toughest kind of waterproofed stock, all beautifully and accurately printed, there's a form-fitting Union Bag for very nearly every packaging purpose. And all have the pleasant virtue of costing less than other packaging materials. If you have a packaging problem, you owe it to yourself to investigate Union Bags. Samples and details gladly furnished. Union Bag & Paper Corporation, General Offices, Woolworth Bldg., New York.

UNION BAGS ARE MODERN PACKAGES

Below: Twenty-four page Portfolio of interest to every firm using paper boxes. Send for it.


THE METAL EDGE PLAN
IS SIMPLICITY ITSELF
Just three Steps in the Metal Edge Process
THE STRONGEST PAPER BOX KNOWN
THE STRONGEST PAPER BOX KNOWN

DO YOU KNOW WHY

Leading Firms, Large and Small, in 77 Lines use the Metal Edge ...PACKAGING METHOD?

When such firms as General Motors, U. S. Rubber, Johns-Manville, Remington-Rand, John Wanamaker, Smith, Kline & French endorse *one particular method* of packaging, there must be good reasons. There are.

One concern considers the saving of 80 to 90% of the space formerly required for storage of made-up boxes most important.

Another values most the way Metal Edge packaging fits into production routine . . . the boxes being assembled just where and when needed.

Others may stress reduction of box inventories . . . elimination of package spoilage and waste . . . suitability for sampling campaigns . . . display possibilities.

All will point to the exceptional strength of Metal Edge boxes (scientific tests prove them the strongest paper boxes known) and what this means in product protection.

THE METAL EDGE PACKAGING PORTFOLIO TELLS THE WHOLE STORY. WE SHALL BE HAPPY TO MAIL YOU A COPY WITHOUT OBLIGATION. WRITE FOR IT.

National Metal Edge Box Co.

330 North 12th Street **Philadelphia, Pa.**

THE STRONGEST PAPER BOX KNOWN

Bring your Packaging Problems to Us

KRAFT-PHOENIX CHEESE CORP.

PARIS MEDICINE CO. GROVE'S BROMO QUININE

AMERICAN TOBACCO CO. LUCKY STRIKE CIGARETTES

THE Package Machinery Company, because of its wide experience and complete facilities, can render valuable assistance in helping you solve your packaging problem—whether it be to find a way to package a new product, to improve the sales appeal of your present package, or to lower costs.

Every year has seen an increase in the number and variety of products wrapped on our machines. This steady growth finds us today with what is probably the largest and most complete line of wrapping machinery built by any single organization.

Briefly, our machines fall into the following classifications:

(1) Machines which wrap cartons in printed wrappers, Cellophane, glassine, waxed paper, foil, printed transparent wrappers, etc.

(2) Machines which wrap the product itself in any of the materials mentioned above—candy bars, yeast cakes, cigars, razor blades, cake, soap, chewing-gum, etc.

(3) Combination bag-making, weighing, filling and sealing machines for such products as coffee, tea, rice, sugar, etc.

(4) Bundling machines for enclosing cartons in bundles of dozen or half-dozen lots. Machine bundling is extensively used because it makes large savings over the cost of packing goods in cardboard boxes.

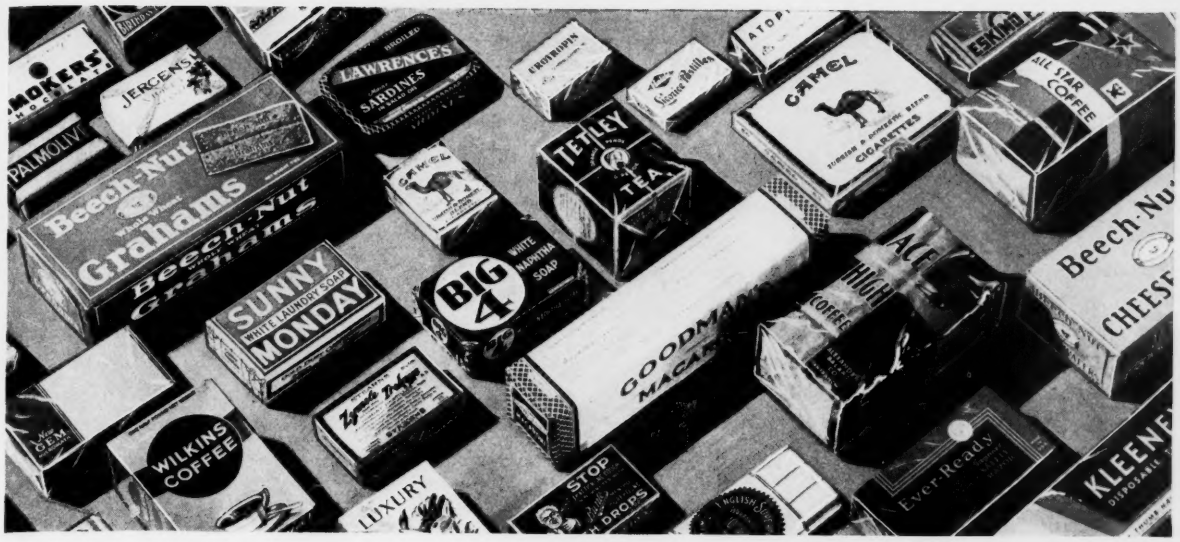
Electric-Eye Wrapping

Electric-Eye Wrapping with printed Cellophane, Glassine, Waxed Paper. This is a most recent development. Heretofore it was impossible to wrap a product by machine in a printed transparent wrapper, *with the printing properly registered on the package.* In machine wrapping, Cellophane, glassine and waxed paper must be fed from a roll—not in sheets. Therefore it was necessary to devise a cutting and registering device which would cut the wrapper from the roll so that the printed design would come in exactly the right location on the package. We accomplished this by designing machines with an Electric-Eye (photo-electric cell) which "watches" the printed design and actuates the mechanism that cuts the wrapper exactly and places it around the goods.

Since the printing is right on the transparent wrapper and usually in solid colors, it is unnecessary to use printed paper

PACKAGE MACHINERY COMPANY

Over 200 Million Packages per day are wrapped on our Machines



wrappers, printed bands, or printed cartons for identification, as is the case when a plain transparent wrapper is used.

Adjustable Wrapping Machines for Various Sized Cartons

These machines are designed for manufacturers who desire to wrap a number of different sized cartons on a single machine. Our F-9 Model, for example, will wrap any variety of sizes within the following limits: 4″ to 12″ long; $1^3/_4$″ to $4^1/_4$″ wide; $1^3/_4$″ to $3^1/_4$″ high.

It is built for either roll-feed or sheet-feed. Registers printed design on the package, and also attaches end-seals, if desired.

Hesser Combination Bag-Making, Weighing, Filling and Sealing Machines

are used extensively for coffee—also for packaging rice, barley, tea, sugar, etc.

The machine first forms the inner bag, taking the paper from a roll. The outer bag, made of a printed sheet, is then formed separately about the inner bag. Finally, the machine transfers the bag to its filling and closing mechanism which completes the packaging operation completely automatic throughout. Packages are made in this manner at very low cost. In addition to the saving in labor, there is a large saving in materials since the cost of materials in rolls and sheets is far below the prices of ready made bags.

"Cellophane" Seal for Milk Bottles

This machine places a sanitary Cellophane seal on milk bottles—as shown here. The seal protects the cap and pouring lip from contamination. And it is much more easily opened than former seals. Unlike paper seals, the Cellophane will not become soiled or marred by handling. It is the most economical form of protection for bottled milk.

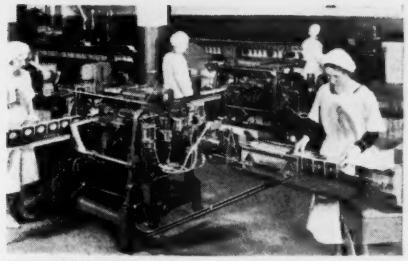
Over a Quarter of a Century's Experience at Your Service

The Package Machinery Company is a pioneer in the development of packaging machinery. Today, the great majority of package goods manufacturers use our machines. This established record of achievement is your surest guarantee of satisfactory service.

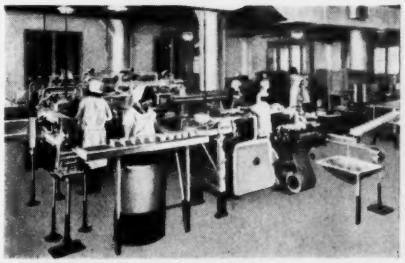
Lower Costs . A better Package

A study of your package, your production methods and machinery may enable us to suggest important savings or improvements that will give your product new sales-appeal. Get in touch with our nearest office.

Machine bundling makes large savings over the cost of packing in containers



JOSEPH TETLEY & CO. TEA



BRISTOL MYERS CO. IPANA & SAL HEPATICA

AMERICAN CHICLE CO. CHEWING GUM

PACKAGE MACHINERY COMPANY
SPRINGFIELD, MASSACHUSETTS
New York Cleveland Chicago Los Angeles
London: Baker-Perkins, Ltd.

Oval, Oblong, Square and Round,
Spiral convolutely wound;
Or what your needs may be in cans,
They all will fit in R. C. plans.

When you've had cans that wouldn't do,
You've looked a large assortment through;
It's then when you will understan',
The value of an R. C. Can.

It matters not how good you are,
In buying cans at below par;
The very best that you can get,
Is honest value every step.

The fact remains that price alone,
For lesser service can't atone;
The higher cost will be retrieved,
Where honest value is received.

You'll find that cans made by R. C.
Are built as good as they can be;
And not to meet a certain price,
To do those things that aren't nice.

To get real cans and service too,
This tip will be a help to you;
Don't waste your time to scheme and plan
Just 'phone or write the R. C. Can.

R. C. CAN COMPANY

MAIN OFFICE AND FACTORY
121 CHAMBERS ST., ST. LOUIS, MO.

2809 E. 14TH ST., KANSAS CITY, MO.

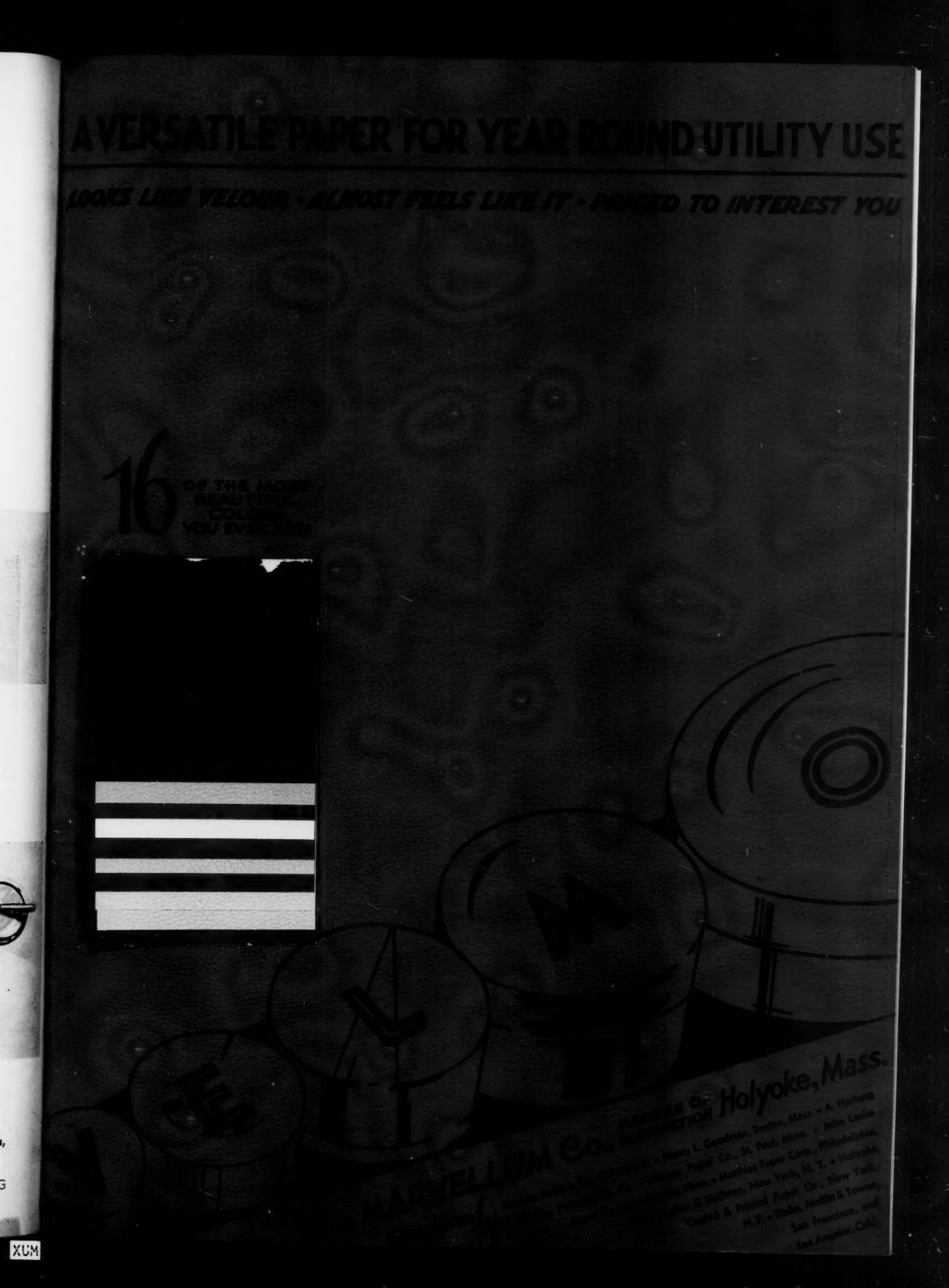
RITTMAN, OHIO

SALES OFFICES: Saint Louis, Rittman, Ohio, Kansas City, Atlanta, Dallas, Detroit, Fort Worth, Houston, Louisville, Memphis, Minneapolis, New Orleans, Omaha, Pittsburgh

A VERSATILE PAPER FOR YEAR ROUND UTILITY USE

LOOKS LIKE VELOUR • ALMOST FEELS LIKE IT • PRICED TO INTEREST YOU

16 OF THE MOST BEAUTIFUL COLORS YOU EVER SAW



MANUFACTURERS OF DISTINCTION **Holyoke, Mass.**

Henry L. Goodman, Boston, Mass. • A. Hartung Paper Co., St. Paul, Minn. • John Leslie Paper Co., Philadelphia, Penna. • Matthias Paper Corp., Philadelphia, Penna. • Morgan & Mathison, New York, N. Y. • Holyoke Coated & Printed Paper Co., New York, N.Y. • Blake, Moffitt & Towne, San Francisco, and Los Angeles, Calif.

MUX

THIS IS OUR

RAINBOW BAG

DUO STYLE

Size 2¾ x 5

—o—

Made In Following Colors:

RED
BLUE
GREEN
TANGO
AMBER
BLACK
AND "ALL CLEAR"
or in
COMBINATION
also in
COLORED PAPER
or
GLASSINE

—o—

SEE ENCLOSURE
"ALL CLEAR" SQUARE
REINFORCED BAG
PRINTED ONE COLOR

PATENTED
JULY 19, 1932

NUMBER
1,868,069

BAGS
OF
Cellophane
TRADE MARK

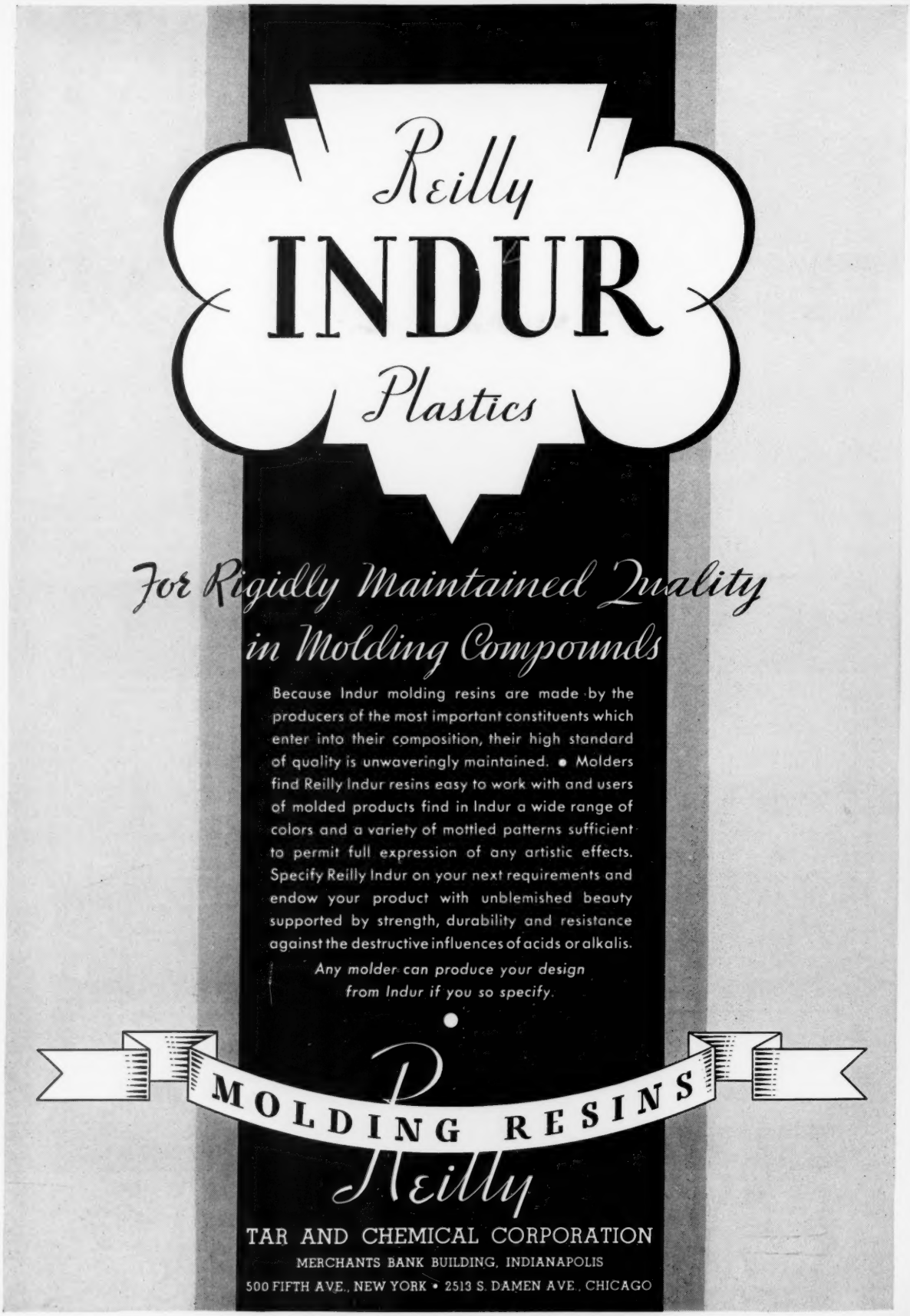
A COMPLETE BAG OF MOISTUREPROOF "CELLOPHANE"

REINFORCED WITH PLAIN COLORS

The MUNSON BAG Co.

10271 BEREA ROAD

CLEVELAND OHIO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INDUR
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For Rigidly Maintained Quality
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Because Indur molding resins are made by the producers of the most important constituents which enter into their composition, their high standard of quality is unwaveringly maintained. • Molders find Reilly Indur resins easy to work with and users of molded products find in Indur a wide range of colors and a variety of mottled patterns sufficient to permit full expression of any artistic effects. Specify Reilly Indur on your next requirements and endow your product with unblemished beauty supported by strength, durability and resistance against the destructive influences of acids or alkalis.
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MOLDING RESINS
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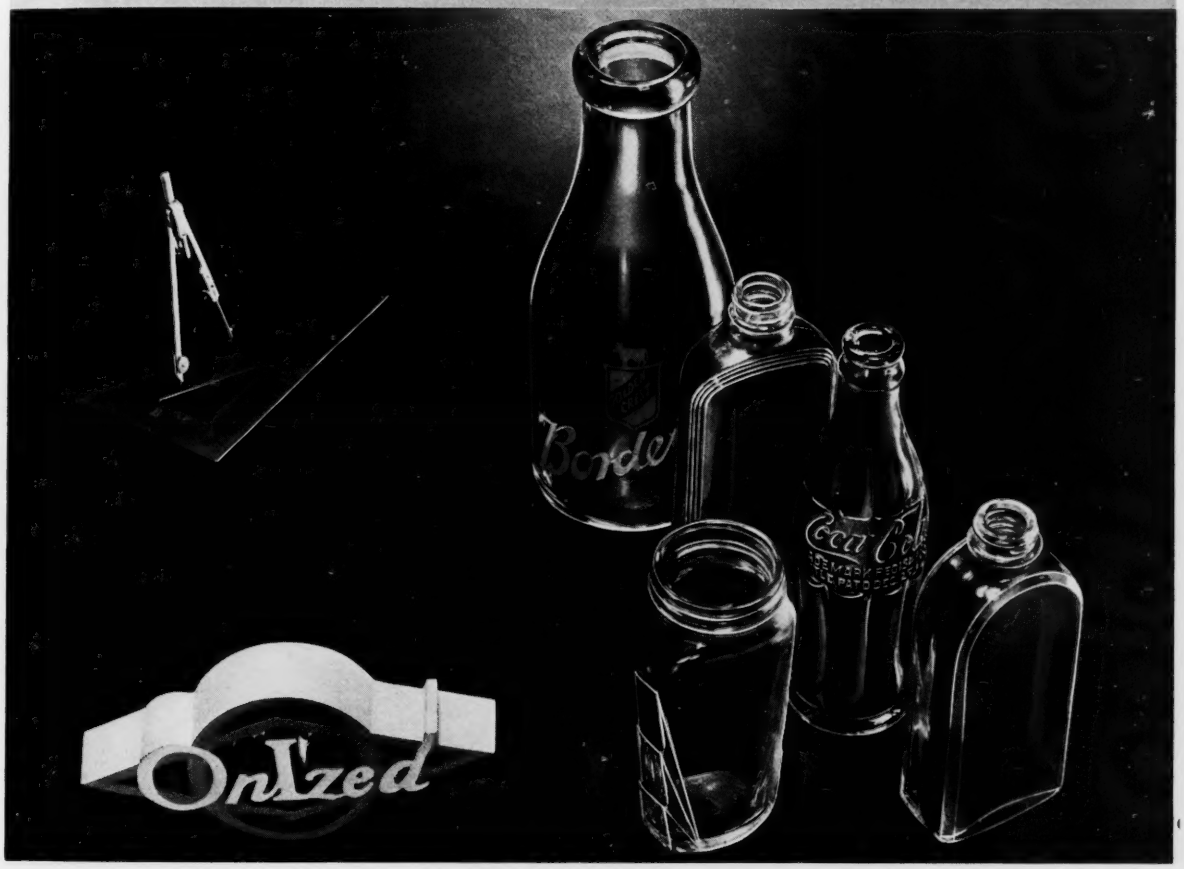
All 3 are necessary

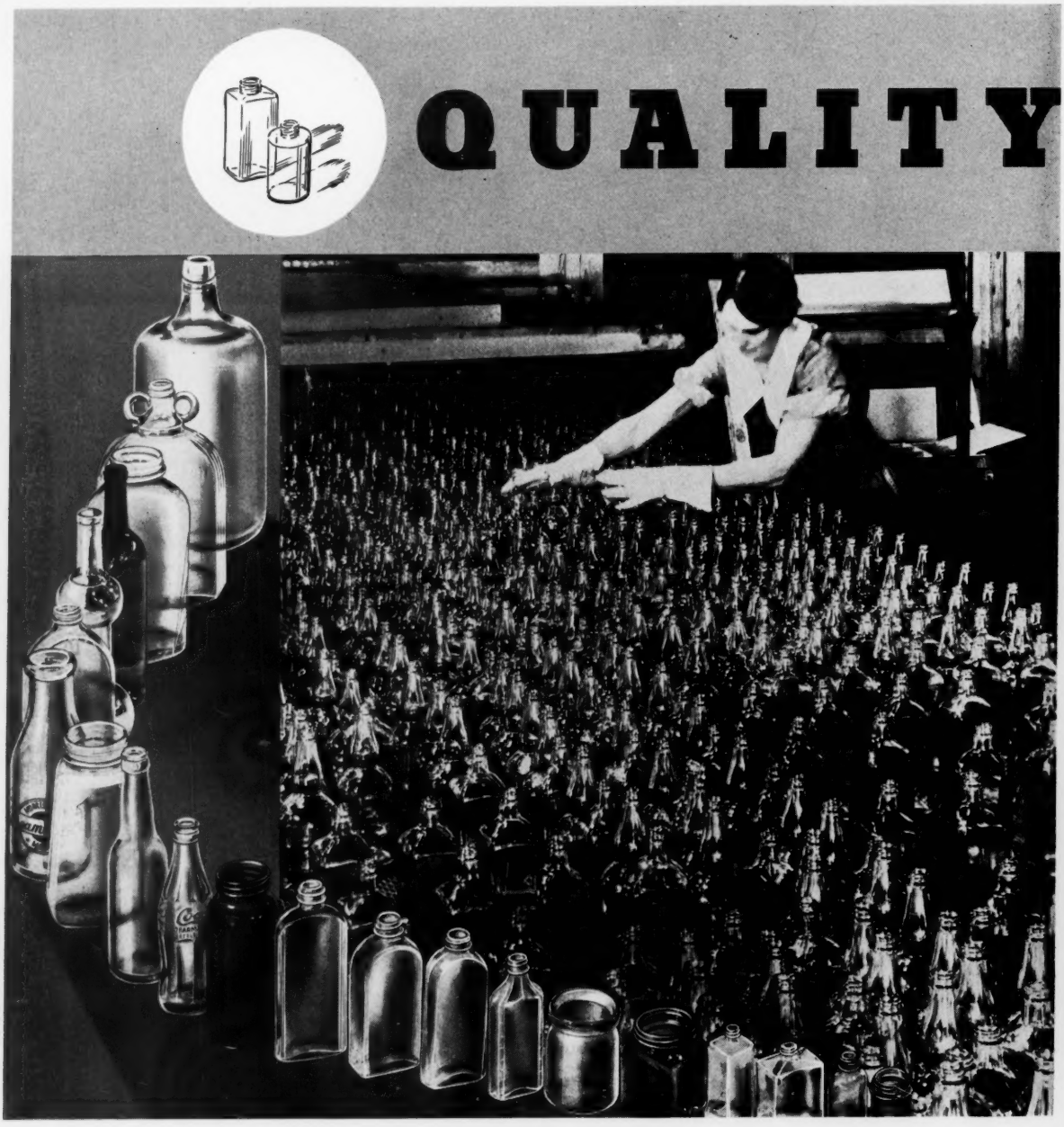
DESIGN ● QUALITY ● SERVICE



DESIGN

Container design is a highly important element in sales. Into every *OnIzed* container design goes the thorough understanding of public buying habits gained through long association with the marketing of all kinds of glass packed merchandise. Distinctive designs are incorporated into *OnIzed* stock-mold glass containers, available in scores of shapes, styles and sizes.

OWENS-ILLINOIS
COMPLETE PACKAGING SERVICE



The uniform quality and accuracy of O*n*I*zed* ware are maintained through careful selection of raw materials, most modern automatic machinery, electric annealing lehrs and scientific control of every step in the manufacturing process up to and including the final inspection before packing. O*n*I*zed* high quality standards also control the making of sturdy corrugated cartons—an important and convenient service which solves your re-shipping problems at low cost.

OWENS - ILLINOIS

COMPLETE PACKAGING SERVICE

SERVICE

OnIzed service includes every phase of your container problem from complete package design including label and closure suggestions to imprinted corrugated and wood case service. For safe and economical re-shipping, *OnIzed* corrugated cartons are especially recommended. *OnIzed* widespread facilities assure prompt, dependable delivery. Write us concerning your packaging problems. Owens-Illinois Glass Company, Toledo, Ohio.

OWENS-ILLINOIS

COMPLETE PACKAGING SERVICE

Closure Service

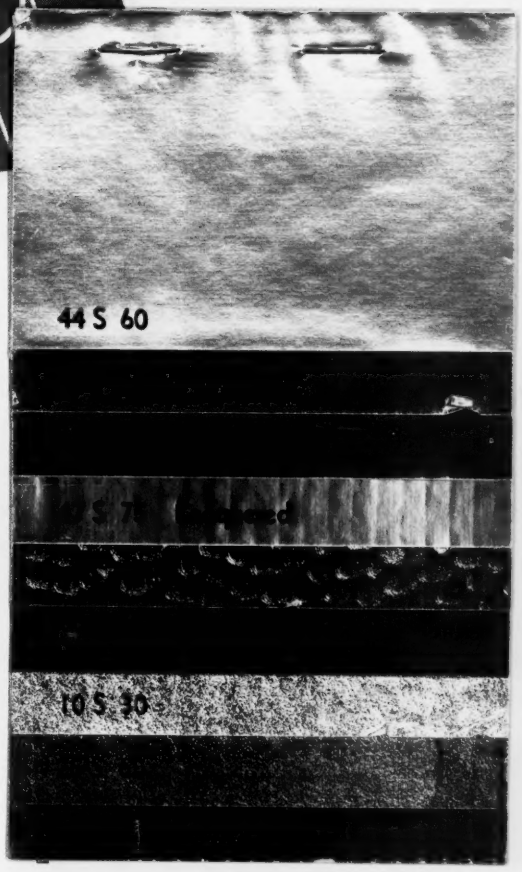
FOR EVERY TYPE OF GLASS-CONTAINED PRODUCT

Every detail of your package plays a part in sales. No detail is of greater importance than the way in which a glass container is sealed. A smartly styled closure that seals securely and is easily removed will make your product outstanding in today's highly competitive market....The Closure Service Company—experienced designers of every type of closure in metal or molded materials—offers a complete capping service for every type of glass-contained product. Let us show you the variety of effects obtainable through skillful use of color and design, as well as the many practical features of our closures which contribute to better, more efficient sealing service.

THE CLOSURE SERVICE COMPANY, TOLEDO, OHIO

YOUR

WE INVITE
INQUIRIES



Quality because longest experience

Service because largest stock

Variety because numerous grades on hand

★

We emboss in many designs

Write for full sample line

KARL PAULI
CORPORATION

454 BROOME STREET
NEW YORK, N. Y.

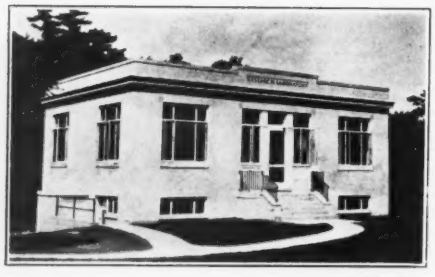
LE PAGE'S COLD SOLUBLES

Five Bags of Powder a Settin' in a Row

Used by Package Makers---Saves a Lot of Dough

FOR ALL PACKAGE OPERATIONS:

¶ Economy—price and production. ¶ Wider range of application than similar adhesives. ¶ Practical application for machine work. ¶ Proper qualities for adaptation on a given machine. ¶ Cleaner and greater production—less shutdowns. ¶ Once demonstrated—always used. ¶ You take no chance or risk in trying it out. ¶ No freezing—as with liquid gums. ¶ A demonstration doesn't cost anything—it's bound to save you dollars.



The Research laboratory where the Le-Page's line of cold solubles were developed, tested and proven.

The facilities of this laboratory are extended to the package trade on all your problems. Working samples on request.

Russia Cement Co.

Laboratories and Factory, Gloucester, Mass.

PAPER AFFILIATES CO., INC.

331 FOURTH AVENUE · NEW YORK

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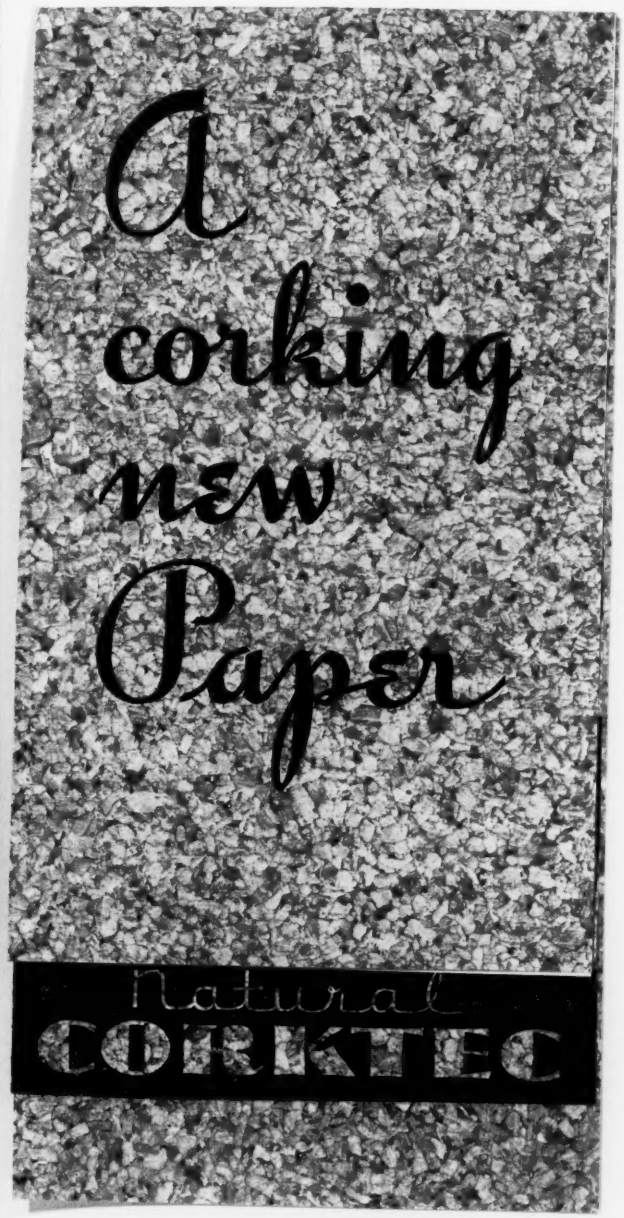

BOX PAPERS—ALL TYPES
Plain—Decorated—Gravure—Embossed
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Special Boxboards—Carton Stocks

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PRINTING PAPERS
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Brush Enamel
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Lithographers Transfer Paper
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Foil—Paper backed—Various Weights
Gummed and Ungummed
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All Types of Gummed and Ungummed Papers in Sheets and Rolls

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NEW PACOSEAL PRESS BLANKET
For Seal Presses (Made in U. S. A.)

PLAIN

EMBOSSED (E S Pattern)
Note the texture and feel.

CORKTEC DISTRIBUTORS

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THE FILLER MACHINE CO., INC.

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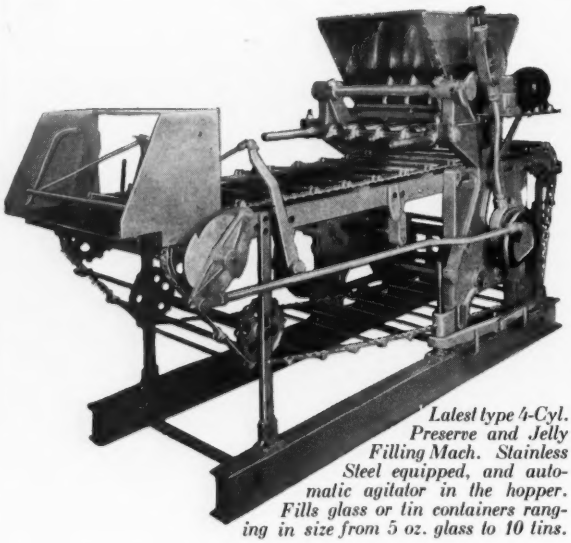
PHILADELPHIA, PENNA.

NEW YORK BOSTON CHICAGO SAN FRANCISCO



Latest type 4-Cyl. Preserve and Jelly Filling Mach. Stainless Steel equipped, and automatic agitator in the hopper. Fills glass or tin containers ranging in size from 5 oz. glass to 10 tins.

Filling Machines for Every Semi-Liquid and Semi-Solid Product Both Automatic and Semi-Automatic

There are a great many competitive products in every field—but usually there is only ONE that excels all others.

Our filling machines fill more semi-solids—are standard equipment in more factories, than all other similar machines built. During the past 20 years, they have earned the reputation of being—

THE WORLD'S STANDARD FILLERS

for semi-solids.

What better recommendation could be expected or given?

Automatic and Semi-Automatic filling, Capping and Conveying Machines, Hot Water Sterilizers for Preserves, etc.

Our filling machines are custom built to meet each individual filling problem.

Any size or shape of container can be handled.

Designed especially to fill such products as—

Jams	Glue
Paste	Syrup
Paint	Jellies
Grease	Lacquer
Mustard	Mayonnaise
Hand Soap	Mince Meat
India Relish	Sour Cream
Cold Cream	Horse Radish
Apple Butter	Crushed Fruit
Peanut Butter	Vanishing Creams

and similar products

Latest Type 4-Cyl. High Speed Mayonnaise Filling Machine

SPECIAL PRODUCTION MACHINES BUILT TO ORDER

Additional Information Upon Request

THE WORLD Knows

One of the greatest thrills of ocean voyagers is entering New York Harbor. When the Statue of Liberty comes into view, every passenger, from steerage to first-class cabin, knows that "THIS IS AMERICA." Thus has this famous statue enlightened the world.

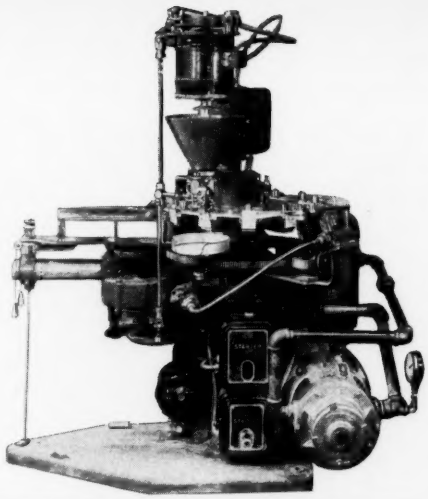
Likewise does a distinctive Milwaukee label or seal enlighten the public. It is a low-cost, convenient, attractive way of identifying your product and your package.

Let our artisans design into your label or seal that character, quality and distinction which will reflect credit on your product and make it remembered. The list of our clientele reads like a blue book of industrial and business leaders. There's a reason.

Write for samples and let us know your requirements.

MILWAUKEE
LABEL & SEAL CO.
1027 N. Seventh St Milwaukee, Wis.

DO YOU USE ENVELOPES? INVESTIGATE!



The MODERN Rotary Envelope Filling Machine fills flat packet envelopes with measured quantity of tablets, face powder, or any free flowing powder product. It automatically feeds empty envelopes to revolving dial; opens envelope; deposits required amount; glues flap of envelope; folds down; seals it firmly, making it secure and dust tight and stacks filled envelopes in tray, if desired.

Production capacity, single type—45,000 per eight hour day.
Production capacity, double type—80,000 per eight hour day.
Floor space—3 feet wide, 4 feet long.

Only one operator required to operate either type machine.

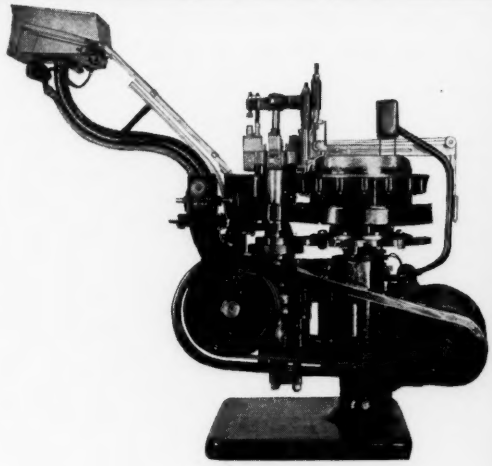
DO YOU FILL POWDERS? INVESTIGATE!

The MODERN Powder Box Filling Machine handles face powder or any free flowing powder product—automatically feeding empty boxes (of any size) to filler, augering required amount of powder into box; depositing film of glue on outer edge of boxes, making same dust tight, and depositing box right side up on conveyor belt or table. Drums loaded to within plus or minus of 2% and automatically glued all around for a sift-proof seal. Tint changes can be made in five minutes or less.

Production capacity—35 to 40 thousand boxes per eight hour day.
Floor space—9 feet by 12 feet, including packing table.

Five operators are required to complete from raw material to shipping cases, one to place drums in loading magazine, two to put on bases and two to put on covers and pack in cases.

DO YOU PACK TABLETS? INVESTIGATE!



The MODERN Rotary Tablet Packing Machine places a predetermined number of aspirin or similar shaped tablets in tin boxes with protecting paper filler and advertising folder and clamps down the box cover.

Production capacity, single head machine—14,000 per eight hour day.
Production capacity, double dead machine—25,000 per eight hour day.
Floor space—3 feet by 3 feet.

Two operators required for either type machine.

For full information write to—

The Modern Packaging Machinery Co.

123-25 NORTH HAZEL ST.
DANVILLE, ILL.

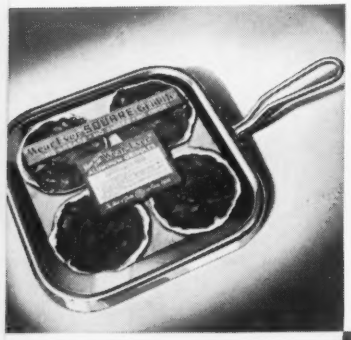
Dennison . . .

first in Packaging

• In 1844 Dennison created for the jewelry trade the *first* boxes made in America. A pioneer in packaging, Dennison has continued ever since a leader in the design and production of boxes, labels, tags, seals, wrappings, inserts and displays. Out of this 91 years of experience has come the artistic and technical skill that qualifies Dennison experts to meet successfully the packaging problems of 1935. For examples, see the following page.

PRINTED ON DENNISON'S SILVER BRONZE PAPER NO. 9710

How *Dennison* Applies 91 Years of Experience to "Modern" Packaging Problems

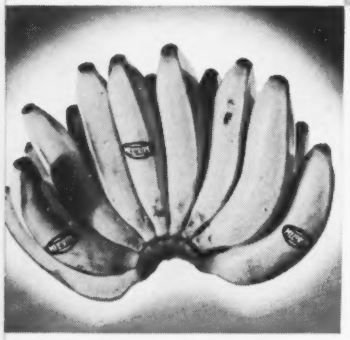


GUMMING. Most metals, such as aluminum, are highly resistant to ordinary gummings, and often require moistening solutions to get the labels to stick properly. Because they desired water soluble gumming for their labels, the Aluminum Cooking Utensil Co. came to Dennison with their problem. Dennison experts developed a special water soluble gumming that gave the maximum adhesion without the use of a special moistening solution.

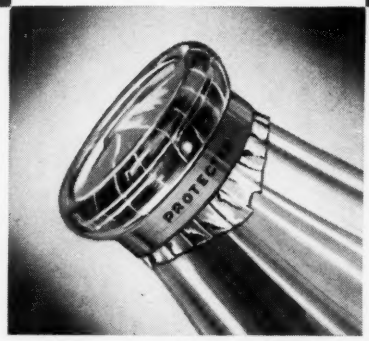
APPLICATION METHODS. Salt packers use printed, gummed, glassine labels to seal the spouts of their salt cans. The Worcester Salt Co. was having difficulty in attaching labels and at the same time maintaining good production. In order to overcome the difficulty a Dennison Technical Service man visited one of the Worcester Salt Company's plants and, after analysis, made definite recommendations that gave the desired result.

SPECIAL CREPE PAPER. Green and Hopson Co. needed an inexpensive package to hold and display their yarn. Dennison devised a printed envelope of non-bleeding colored crepe. Non-bleeding stock was necessary in order to eliminate any danger to the yarn, which might become moist after handling, absorbing some of the color in the envelope. This special care and resourcefulness is typical of Dennison's work.

GUMMING AND APPLICATION. Dennison found that a slight change in the gumming of labels made for No-Mend Hosiery Mills increased the speed of attaching and at the same time eliminated the possibility of part of the body stock being left on the hosiery, when the label was removed. Dennison also developed a new, more economical method of attaching the label, eliminating waste of time and labor.



GUMMING. Trade-marked fruits and vegetables have become very popular with both the trade and the consumer. Commissioned to produce labels to adhere to Mel-o-Ripe bananas, the Dennison Laboratory first made sure to develop a suitable gumming that would stick under all conditions. Then, to be sure that the labels were applied in the proper manner, a more efficient, economical method of attaching the labels was recommended.



FINISH. The newest thing for dairies and milk distributors is a milk bottle cap of transparent cellulose. To fasten this cap securely, Dennison developed a binding tape for the neck of the bottle. Because dairies use special machinery for this type of bottling, it was necessary to design a tape for use on these machines. This Dennison tape, in many bright colors, has a waterproof surface that may be printed, and special gumming on the reverse side.

EVERY packaging problem is a *new* problem, yet every factor entering into it has been encountered again and again as Dennison has solved other packaging problems in the past. The skill of artists and craftsmen, the technical knowledge of laboratory experts, tools and equipment for production—all are important, but back of them are Dennison's 91 years of experience in rendering a superior packaging service.

Each year this experience proves more valuable in its application to new problems and new needs. For Dennison is alert to trends, to merchandising developments. Its jewelry boxes expressed "modern" packaging in 1844—its distinctive containers, tags, seals, labels and wrappings express the ultimate in modern packaging today.

Give *your* problems the benefit of this combination of skill and experience. The advice of Dennison experts is yours, without cost or obligation, to help you save money, sell goods, win distinction for your product. So, when your next packaging job comes up—whatever it may be—get in touch with Dennison. A competent representative will respond promptly. Dennison Manufacturing Co., Framingham, Mass.

For Better Packaging See *Dennison* First

BOXES • LABELS • SEALS • TAGS • PRINTED WRAPPINGS • ENVELOPES

XUM

WITHIN EVERY PRODUCT THERE'S A **"REASON WHY"** CONSUMERS WILL READILY BUY IT. ILLUSTRATED ABOVE ARE A FEW EXAMPLES OF HOW R-T-G UTILIZE THIS PRINCIPLE IN THE MODERN PACKAGES THEY PRODUCE.

THE RICHARDSON-TAYLOR-GLOBE CORPORATION

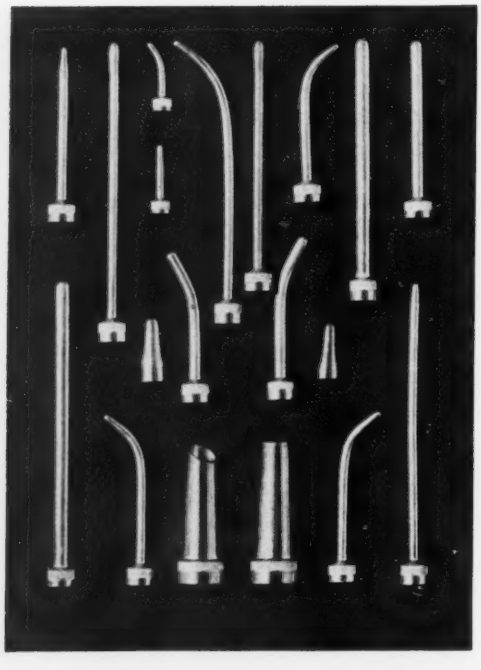
CREATORS, DESIGNERS AND MANUFACTURERS OF DISTINCTIVE FOLDING CARTONS

4508 West Mitchell Avenue • Winton Place • Cincinnati, Ohio

BOSTON • NEW YORK • BUFFALO • CLEVELAND • DETROIT • MINNEAPOLIS • ST. LOUIS • WATERLOO • MEMPHIS • NASHVILLE • ATLANTA

STANDARD COLLAPSIBLE TUBES

All Sizes—Plain or Decorated



We are equipped to manufacture both plain and decorated Collapsible Tubes in sizes from $\frac{3}{8}$" to $2\frac{1}{2}$" in diameter and with styles of openings suitable for practically any product.

This wide range of sizes and styles, together with our thirty years' experience, enables us to offer you exceptional service in solving your packaging problems.

Applicator Pipes

The adjoining illustration shows some of the many types of applicator pipes which we manufacture. Attached to Collapsible Tubes they provide easy application of various ointments and other products. Special pipes can be developed for special purposes.

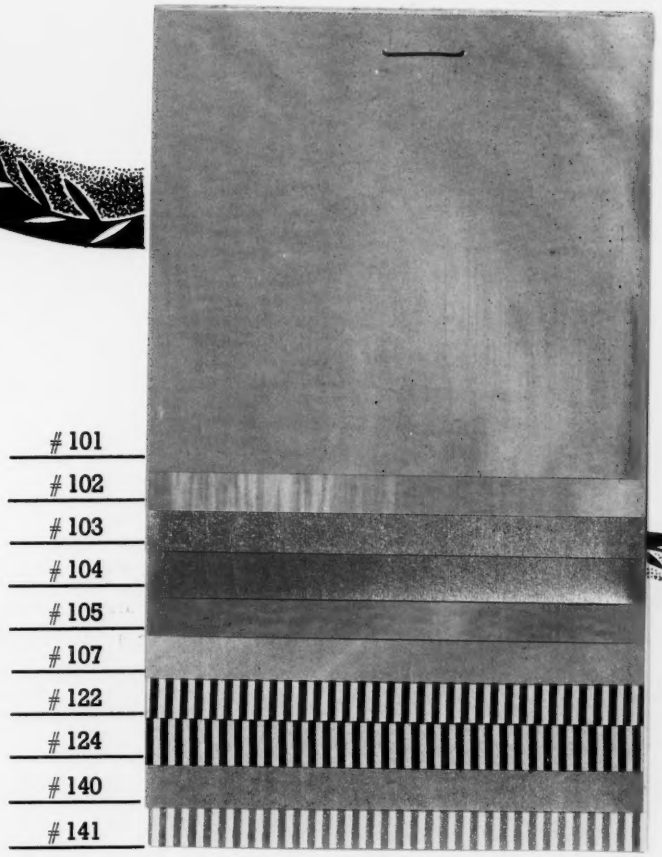
Write for illustrated catalog describing our complete line of tubes and accessories.

STANDARD SPECIALTY & TUBE COMPANY

New Brighton, Pa.

PAPERS that are DIFFERENT

That's the word . . . . Different. Ray-O-Nite Fancy Coated papers bring a new note to packaging, a note that can lend your product a distinctively *different* appearance, and attractiveness all its own. Note the samples on the attached swatch. Check them against the *usual* papers you see on *usual* packages. Then write us for work sheets and additional samples. Best of all . . . check these papers, effect for effect, cost for cost against any others on the market. We also manufacture embossed papers. Let us study your packaging needs and offer practical sales-building specimens.

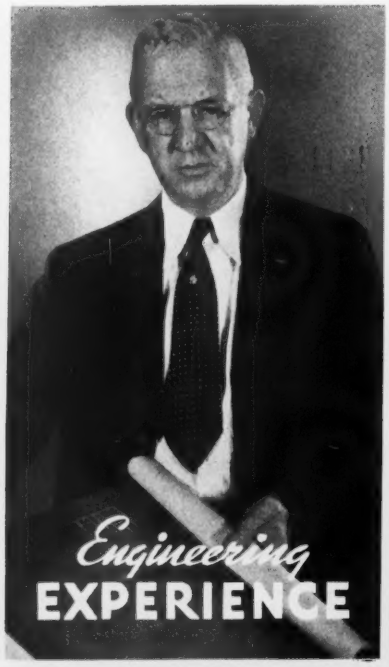


RAY-O-NITE COATED PAPER MILLS

520 SCOTTSVILLE ROAD
ROCHESTER, N. Y.

Lower cost

is the sum total of what Pneumatic

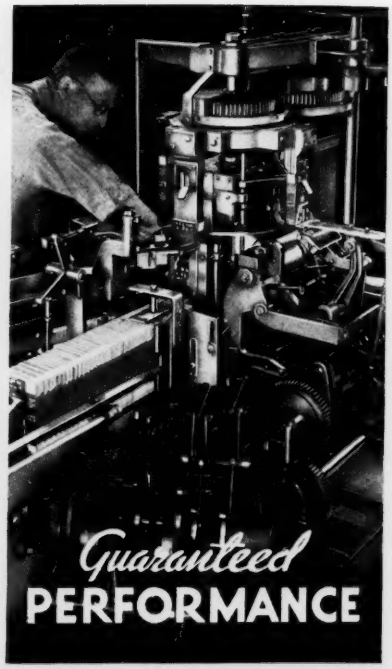


Engineering
EXPERIENCE

The experience of Pneumatic's engineers averages more than twelve years per man, including a number who can claim thirty years or more.

Plant
FACILITIES

Pneumatic's equipment for packaging machinery production is unequalled by any other company in the automatic packaging machinery field.



Guaranteed
PERFORMANCE

Every Pneumatic machine must first produce its promised production in our plant, using your own containers, before it is delivered to you.

If you evaluate all the factors that have made Pneumatic the most widely used of all packaging machinery you will understand why it is the most economical packaging machinery you can buy.

Those factors are many but they can be totaled under the heading of experience and facilities. The Pneumatic organization has, without question, the most experienced and able staff of automatic packaging engineers ever gathered together in one organization. They are the reason for the soundness of Pneumatic's advice on your packaging problems as well as the operating efficiency of Pneumatic machines themselves. The acknowledged mechanical excellence of these same machines is a result of both long manufacturing experience and of unequalled plant facilities that make possible extremely high production standards. In the long run this excellence pays its own dividends in the way of lower operating costs, as thousands of Pneumatic machines are now demonstrating in hundreds of plants in all industries.

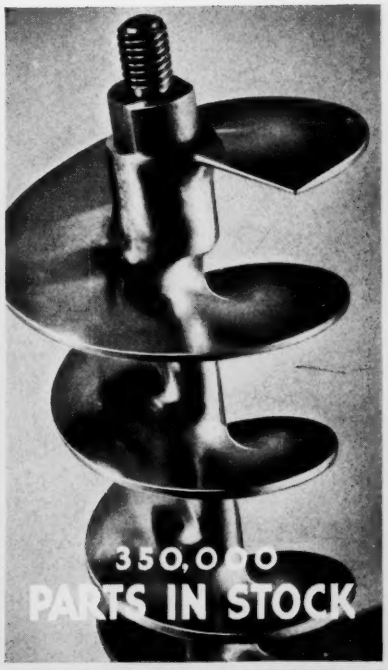
PNEUMATIC SCALE CORPORATION, LTD.
77 Newport Ave., Quincy, Mass. (Norfolk Downs Station)
Branch Offices in New York, 117 Liberty Street; Chicago, 360 North Michigan Avenue; San Francisco, 320 Market Street; Melbourne, Victoria; Sydney, N. S. W. and Trafalgar House, No. 12 Whitehall, London, England

PNEUMATIC SCALE

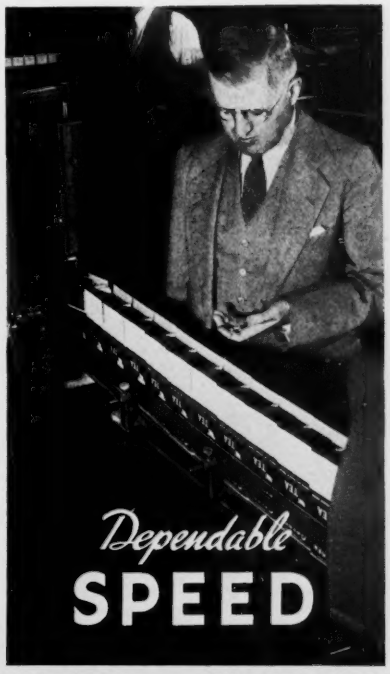
per container

machines and service offer you

Pneumatic engineering service starts right in your factory before any machines are sold and continues during the life of the machine.



Pneumatic maintains the largest and most complete stock of replacement parts, ready for speedy, immediate delivery the moment they are needed.



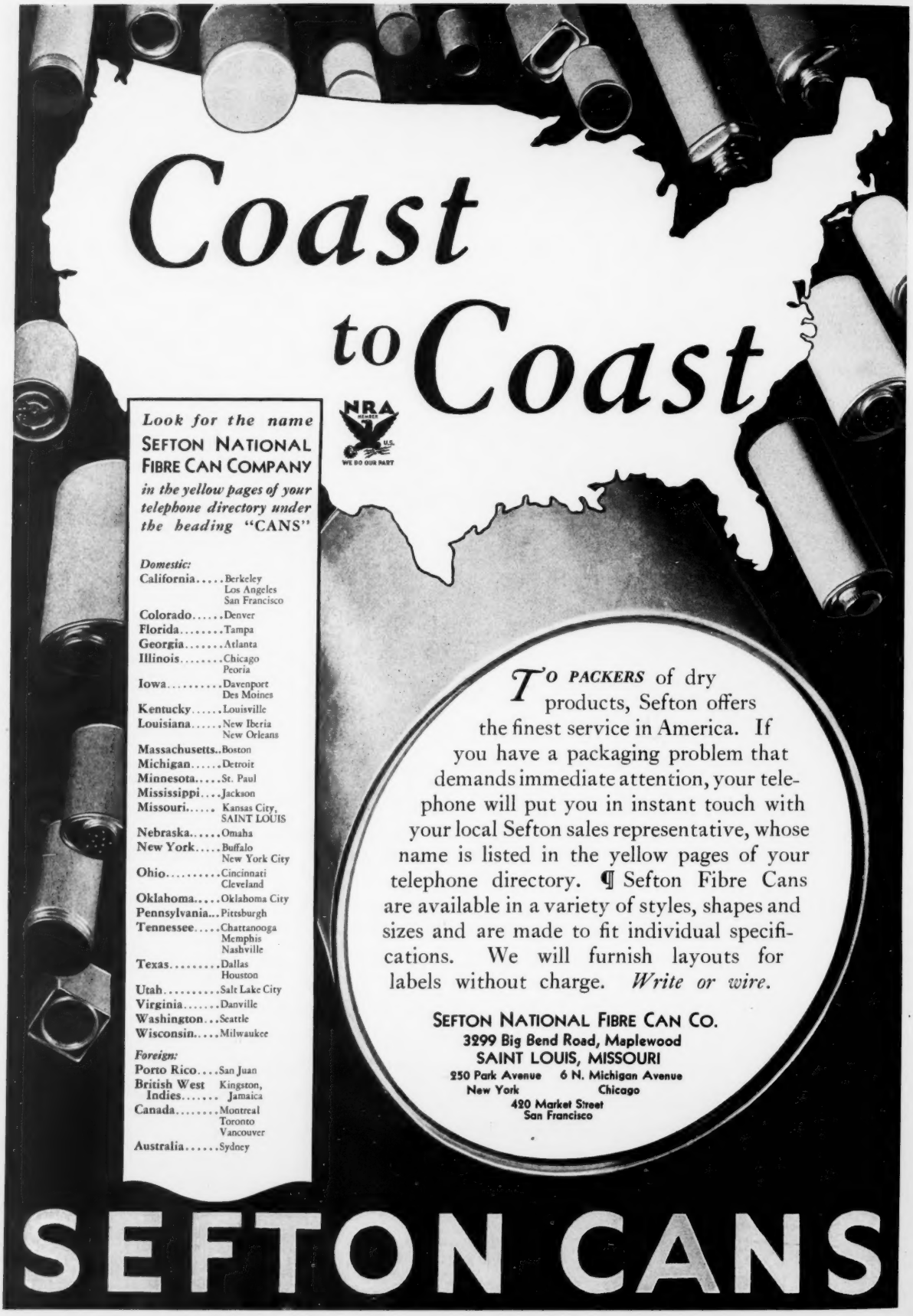
Every Pneumatic machine can be depended upon to meet its rated speed consistently and continually. Its output is guaranteed.

PNEUMATIC MADE MACHINERY

For dry, free-flowing materials. For liquids and semi-liquids

Carton Feeders — Bottom Sealers — Lining Machines — Weighing Machines (Net and Gross)—Top Sealers—Tight Wrapping Machines—Capping Machines—Labeling Machines—Vacuum Cleaning and Filling Machines (for liquids or semi-liquids)—Tea Ball Machines—Box Making Machines

Packaging Machinery


Coast
to Coast
NRA MEMBER U.S. WE DO OUR PART
Look for the name
SEFTON NATIONAL FIBRE CAN COMPANY
in the yellow pages of your telephone directory under the heading "CANS"
Domestic:
California.....Berkeley, Los Angeles, San Francisco
Colorado.....Denver
Florida.....Tampa
Georgia.....Atlanta
Illinois.....Chicago, Peoria
Iowa.....Davenport, Des Moines
Kentucky.....Louisville
Louisiana.....New Iberia, New Orleans
Massachusetts..Boston
Michigan.....Detroit
Minnesota.....St. Paul
Mississippi....Jackson
Missouri..... Kansas City, SAINT LOUIS
Nebraska.....Omaha
New York.....Buffalo, New York City
Ohio.....Cincinnati, Cleveland
Oklahoma.....Oklahoma City
Pennsylvania...Pittsburgh
Tennessee.....Chattanooga, Memphis, Nashville
Texas.....Dallas, Houston
Utah.....Salt Lake City
Virginia.....Danville
Washington...Seattle
Wisconsin....Milwaukee
Foreign:
Porto Rico....San Juan
British West Indies..... Kingston, Jamaica
Canada.....Montreal, Toronto, Vancouver
Australia.....Sydney
TO PACKERS of dry products, Sefton offers the finest service in America. If you have a packaging problem that demands immediate attention, your telephone will put you in instant touch with your local Sefton sales representative, whose name is listed in the yellow pages of your telephone directory. ¶ Sefton Fibre Cans are available in a variety of styles, shapes and sizes and are made to fit individual specifications. We will furnish layouts for labels without charge. Write or wire.
SEFTON NATIONAL FIBRE CAN CO.
3299 Big Bend Road, Maplewood
SAINT LOUIS, MISSOURI
250 Park Avenue, New York
6 N. Michigan Avenue, Chicago
420 Market Street, San Francisco
SEFTON CANS

SPOTLIGHT

The Mason Tie-rack, illustrated here, is just a single example of Mason's facilities for producing unusual novelties. This same technique is applied to the production of displays for jewelry and other fine articles, accessories for home and office use, in endless variety.

This cover of the PACKAGING CATALOG was designed and produced completely by the Mason Fine Arts Division. Mason extends a special invitation to publishers of year books, diaries, catalogs, and other publications to consult Mason when they are interested in fine covers.

YOUR product possesses Quality, Style, Exclusiveness, Beauty? Then spotlight it with a Mason Container which expresses all of these qualities the moment the consumer's glance rests upon it. Give outward expression to the good taste evident in the product itself when the container cover is lifted.

Beauty is more than skin deep in Mason Containers. To original, individual design which harmonizes perfectly with the finest articles, Mason brings a thoroughness of construction that makes your container a useful and long-prized reminder of its contents. It adds zest to the purchase, pride and satisfaction in its possession.

For cosmetics, jewelry, dress accessories—for the thousand and one useful and ornamental articles which deserve containers of striking design, Mason offers a thousand and one fitting suggestions. Boxes which reproduce a rare Cellini, if you wish—or a container as modern as a stream-lined train. Every facility of box-making art is here available to you.

We'll be happy to show you Mason Containers produced for other discriminating users. We'll be happier still to demonstrate exactly what we can do for you to spotlight your product.

Fine Arts Division
THE MASON BOX COMPANY
Attleboro Falls, Massachusetts
NEW YORK: 1123 Broadway, N. Y.

SEE NEXT PAGE

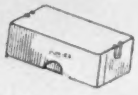
MASON CONTAINERS
FINE COVERS AND EMBOSSED SPECIALTIES

MASON MODERN MAILERS 2 MASON SAMPLE SHIPPING SERVICE

TIME AND MONEY SAVING SERVICES FOR THOSE WHO

1 SHIP BY MAIL ◆ SAMPLE BY MAIL 2

A MASON MAILER FOR EVERY PURPOSE



PARCEL POST BOX---for all unsealed mail.

FOURTH-CLASS BOX---for sealed first, third and fourth-class mail.

UNIVERSAL BOX --- for registered mail.

BONDED BOX---for valuable sealed mail.

IN ITS 1935 line of Modern Mailers, Mason brings to those who ship by mail the most complete and comprehensive range of mailing containers developed in its two decades of container-making experience.

Originator of containers especially designed for the safe and economical shipment of every kind of article sent by mail, Mason this season offers a choice of two different types of Mason Mailers: 1) MAILMASTER---strongest and lightest mailer made, with patented wire fastener, full-depth cover and thumb-cuts; 2) MAILFAST---the new Mason box with the exclusive *Locktab* optional feature.

1,000,000 Modern Mailers in stock at all times---51 different sizes to choose from for stock shipment---and a selection of 7 styles designed for every class of mail shipment---you can depend upon Mason to supply *exactly* the container you need for your postal shipments.

Let "Mail Shipping Headquarters" suggest the safest and most economical container for your products.

PACK AND SHIP AS THE BOX IS MADE

For the quick, safe, effective and economical mail shipment of samples in quantity, use the Mason Sample Shipping Service---six speedy steps, one continuous operation:

1. Make the box.
2. Pack the sample.
3. Attach addressed label to cover.
4. Close the box and seal with the famous Mason tabs or flaps.
5. Check and segregate for quick shipment.
6. Mail at the Post Office next door.

MAIL ATTACHED CARD for Bulletin No. 21---learn just how Mason's Sample Shipping Service can help you cut costs, speed sample delivery, insure safety and secure better results.

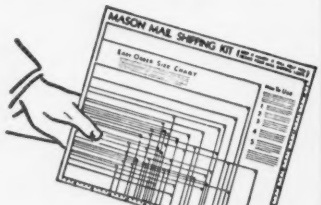
MAIL merchandisers, mail samplers and coupon advertisers enthusiastically welcome the Sample Shipping Service because it speeds sampling, cuts costs and certifies receipt of their costly samples in perfect condition.

For little more than the cost of the mailing container alone, the Sample Shipping Service addresses labels, wraps and packs your samples in a custom-made Mason Mailer, fastens the containers, affixes the labels, places the proper postage on each package---and mails your samples from the post office next door!

You'll find this unusual Service a time and money-saver because it "Packs and ships as the container is made." It removes the sample mailing burden from your own staff---places your samples in the hands of your inquirers or prospects much more promptly---and makes certain that samples reach them intact.

Tell us what you sample by mail---and let us show you just how the Mason Sample Shipping Service can save you trouble, time and money.

This Kit



belongs on your desk. Includes: postal rates and regulations; suggestions for packing and shipping; description and prices of Mason Modern Mailers. SEND FOR IT---NOW

Mail Card For Your Copy!

MASON MODERN MAILERS
TIME AND MONEY SAVING SERVICES FOR THOSE WHO
2
MASON SAMPLE SHIPPING SERVICE
1 SHIP BY MAIL ◆ SAMPLE BY MAIL

SEND US FREE a copy of the time-and-money saving **MAIL SHIPPING KIT**

We ship by mail:

ARTICLE OR PRODUCT

Check ☐ Here

TELL US MORE (without obligation) about the Mason **SAMPLE SHIPPING SERVICE**

We sample:

ARTICLE OR PRODUCT

Check ☐ Here

FIRM.....

ST. & NO.....

CITY & STATE.....

MR.....

SEE PRECEDING PAGE

The MASON BOX COMPANY
Attleboro Falls, Mass.-New York, 1123 Broadway

YOUR PRODUCT
IN A TUBE ★ A JAR ★ OR A BOTTLE ★

NEEDS PROTECTION
AGAINST SUBSTITUTION ★ BREAKAGE ★ AND SPOILAGE ★

AND EASY RECOGNITION
OF SALES POINTS ★ USES ★ AND TRADE MARK ★

AS WELL AS CONVENIENCE
IN SHIPPING ★ HANDLING ★ AND DISPLAY ★

THIS SUGGESTS
FOLDING CARTONS ★ AND FOR THE BEST USE

Ridgelo
CLAY COATED
FOLDING BOXBOARD
FOR ITS FINE FINISH-
EFFECTIVE PRINTING
AND CARTON DISTINCTION.

MADE AT
RIDGEFIELD
NEW JERSEY
by
LOWE PAPER COMPANY

Ridgelo

CLAY COATED LITEFAST

Ridgelo Clay Coated Folding Boxboard is stocked as follows:

WHITE:

.012, .016, .018, .020, .024 and .030—size 28 x 44, Double Lined.
.016—size 28 x 44, Single Lined.

EIGHT LITEFAST COLORS:

.016—size 28 x 44, Double Lined.
Gold, Silver and Copper, .016, .024—size 28 x 22, Double Lined.

Special sizes, colors and finishes will be made to order.

A sample book and **RIDGELO** Color Selector showing two-color carton ink combinations on stock colors will be sent on request.

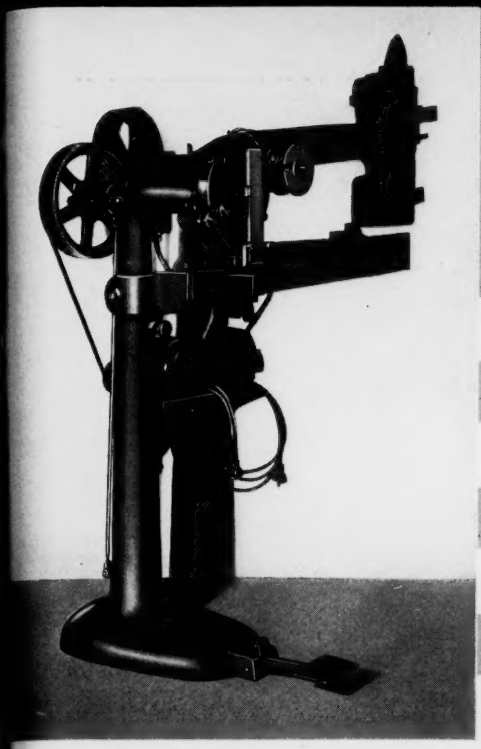
This insert is lithographed in five colors and varnished on RIDGELO Clay Coated Folding Boxboard.

MADE AT
RIDGEFIELD,
NEW JERSEY
by

LOWE PAPER COMPANY

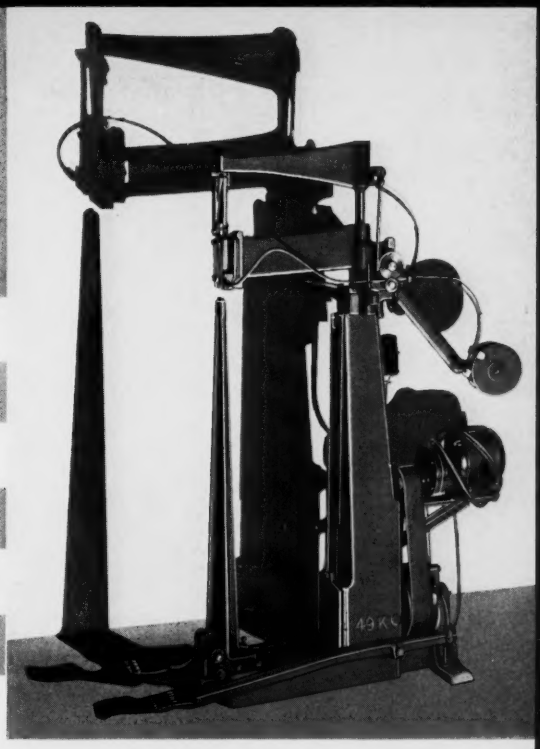
Representatives: W. P. Bennett & Son, Toronto
A. E. Kellogg, St. Louis
MacSim Bar Paper Co., Chicago
Pacific Coast Distributors: Blake, Moffitt & Town
Zellerbach Paper Co.

REAL PROFIT 3 PROTECTORS



Saranac 12" Box Stitcher

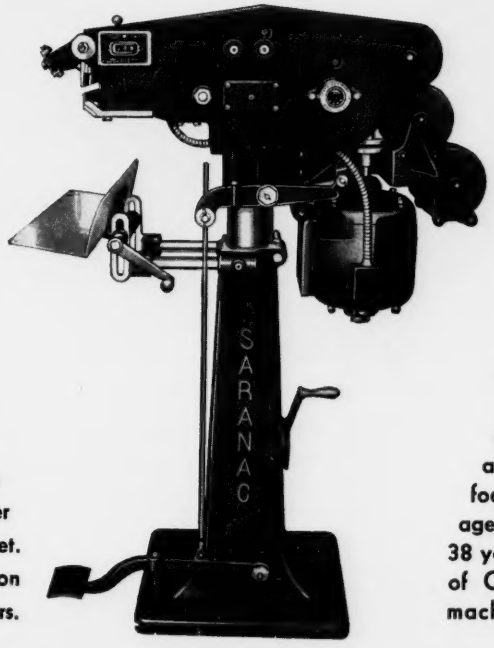
- speed production
- save material-labor
- minimize repair costs
- produce permanent stitches
- backed by 38 year record



Model "K", set-up for bottom stitching

BUILT FOR HEAVY DUTY

The fast, powerful, light-running Box Stitcher shown above is typical of Saranac's large family of Fibre Container Stitchers. Entirely self-contained, it manufactures its own staples from the spool of standard gauge, round or flat wire . . . Saranac Stitchers are sold under positive guarantee to do more and better work than any others on the market. . . . Write for new free Bulletin 125 on Saranac Fibre Container Stitchers.



PRICED FOR POPULAR USE

In addition to the heavy duty line of Fibre Container Stitchers, Saranac offers Model "K", a popular-priced unit. Model "K" is shown above, equipped for bottom stitching. Can be converted to Side Stitcher in a few moments' time. Staples can be driven parallel or at right angles to arm. Also available in foot power . . . If you have a package-fastening problem, draw upon our 38 years of experience as manufacturers of Container Stapling (wire stitching) machinery. Ask for Bulletin 125.

SARANAC MODEL D-10" BAG SEALER

Model D-10" seals bags rapidly, securely—almost hermetically. Stapling heads manufacture, drive and clinch their own staples from spools of wire. The reverse double-fold is accomplished in the same single stroke, and the resultant stapled fold is the strongest part of the bag. Model D-10" is designed for the rapid, economical closure of all kinds of paper bags; bags with or without liners; glassine bags; cellophane bags . . . Saranac Sealers save in the labor bill, in the fastening units, in the bag contents (the closure is sift-proof), in losses due to rough handling. Write for Bulletin 154.

SARANAC MACHINE COMPANY

BENTON HARBOR • • • MICHIGAN

In Tube Decoration—

SUN IS UNSURPASSED!

●

● Manufacturers know that one of the chief advantages of the collapsible tube is its capacity for attractive and sales-producing decoration. ● Besides contributing to improvements in metallic structure, closures and methods of manufacture, Sun Tube Corporation also has improved methods of tube decoration. An exclusive Sun feature is the use of photo-engraved, centrifugally cast bronze cylinders as decorating plates. This insures crisp, accurate register of your tube design. ● Sun Tubes have no superior for attractiveness, economy and efficiency.

SUN TUBE
CORPORATION
HILLSIDE · NEW JERSEY

REPRESENTATIVES:

HARRY HOLLAND & SON, INC.
400 West Madison Street
Chicago, Ill.

HARRY HOLLAND & SON, INC.
1941 West Fort Street
Detroit, Mich.

R. B. BUSCH
100 So. Ohio Bank Bldg.
Cincinnati, Ohio

ALEXANDER SEYMOUR
1745 University Ave.
St. Paul, Minn.

PACKAGE ASSOCIATES
407 East Pico Street
Las Angeles, Calif.

A DISTINCTIVE LABEL
Makes a SELLING Package

All other things being equal, the executive who chooses his labels most carefully will enjoy the greatest sales volume for his product. He early learns the truth of the maxim: *Improve your label and you improve your sales.*

He also finds that the surest method of attaining this end is to act on the principle that *it pays to consult an authority.*

The Tablet & Ticket Co., recognized for over sixty-five years as an outstanding authority in the field, has been helping thousands of firms increase their sales with better labels.

If you are dissatisfied with your present sales volume, look to your labels. Attach some samples to your letterhead and send to The Tablet & Ticket Co. for expert analysis, suggestions and quotations. No cost or obligation whatever.

The TABLET & TICKET CO.

1019-C W. ADAMS ST., CHICAGO, ILL. • NEW YORK • SAN FRANCISCO • BOSTON

Pioneer Originators, Designers and Manufacturers of Embossed and Flat-printed Foil and Paper Labels

BETTER SEALS MAKE BETTER SALES

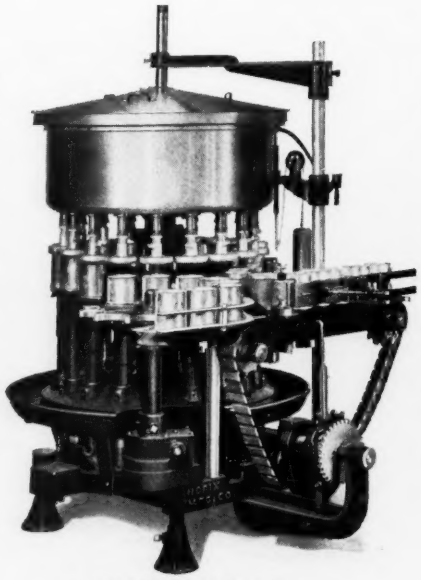
XUM

HORIX MANUFACTURING COMPANY

Corliss Station, Pittsburgh, Pa.

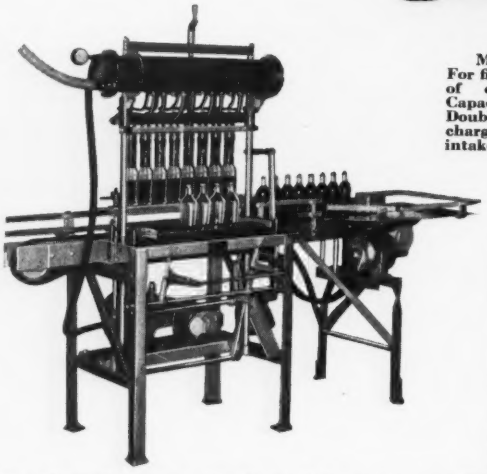
AUTOMATIC FILLING MACHINES

To increase output, reduce production cost, eliminate waste—our 30 years' experience is at your service. Repeat orders tell the story of sustained satisfaction in Horix-Haller Filling Equipment. We also make a complete line of conveyors, both Chain type and Worktable belt type.



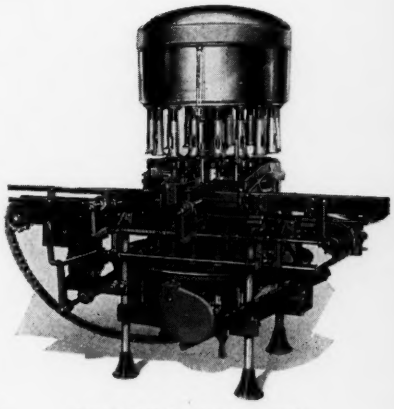
Model H. S. 18 Tube Filler. For filling Soups, and Saucing cans of different sizes. Maximum Capacity 200 Cans per Minute. Double seamer connects to disc discharge. Can conveyor connects to intake feed.

We manufacture Hand and Automatic Rotary and table type fillers for all kinds of light or medium heavy products. We illustrate only a few models. Many millions of containers of the world famous brands of liquid products are bottled and canned daily on Horix-Haller fillers.



The illustration shows our Model N-V Gravity-Vacuum Straight Line Filler with only a short discharge conveyor. Filling range—any size or shape bottle from miniatures to gallons. Capacity 40 to 50 pints or 24 to 30 quarts per minute.

An inquiry costs nothing but may pay big dividends.



Model H-B-V, with Automatic Feed and Discharge. Filling range 4 oz. bottles to quarts. 40 to 160 per minute, depending on size and style.

SPECIAL FEATURES:

Furnished for Straight Gravity or Gravity-Vacuum Filling. No loss of liquid due to defective bottles. No drip from filling tubes. Easily and quickly changed from one size bottle to another. Always fill to desired uniform predetermined height. High continuous speed. No bottle breakage. All parts easily accessible. Simple, sanitary and easy to clean. Can be operated by unskilled labor. Designed for long life. Operate efficiently with all standard Washers, Corkers and Labelers.

HORIX MANUFACTURING COMPANY CORLISS STATION, PITTSBURGH, PA.

The making of fine boxes has been so long a practice at the William Buedingen plant, that work such as this is not considered unusual. On the contrary, from designers to our last workman, we have learned to take jobs that would worry others in our stride. For better boxes, consult—

Wm. Buedingen & Son.

1500 CLINTON AVE. NORTH ROCHESTER, N. Y.

New York Representative: F. J. Redding, 30 E. 42nd Street

CREATORS OF
DISTINCTIVE
DESIGN AND
MANUFACTURERS
OF DECORATED
METAL CONTAINERS
AND CLOSURES

The TIN DECORATING COMPANY
of BALTIMORE

CHICAGO
36 S. STATE ST.

CLEVELAND
226 UNION BLDG.

NEW YORK
500 FIFTH AVE.

F. J. STOKES MACHINE COMPANY

COLLAPSIBLE-TUBE, JAR AND POWDER FILLING EQUIPMENT

New York Office—
103 Park Avenue

5990 Tabor Road, Olney P. O.
PHILADELPHIA, PA.
Cincinnati Office—230 Wilmuth Ave.

Los Angeles Office—
1231 E. 7th Street

Powder Filler, 15-B (Basic Model)

EQUIPMENT

Tube Filling Equipment

Jar and Can Filling Equipment

Powder Filling Equipment

Tablet and Pill Making Machines

Counting and Bottling Machines

Mixers—Kettles

Conveyors

Bottle Washers

Special Filling Machines

ADVISORY SERVICE

Our 40 years' experience in designing and building filling equipment for collapsible tubes, jars, cans, bottles, boxes and cartons enables us to recommend the most economical and efficient set-up for any product and, if necessary, the proper auxiliary equipment. This advisory service is available upon receipt of information on your production requirements and samples of material and containers. Special filling equipment developed for special products.

Folders and booklets on request.

CLIPLESS CLOSURES

STOKES Clipless Closures eliminate the expense and inconvenience of using clips. They are of three main types—Double-fold "DiamonLock," Quadruple-fold "DiamonLock" and the Westite Closure.

The "Double-fold DiamonLock" is suitable for products such as pastes, glues, rubber cement, etc. where seepage is not a problem and strength is of minor importance. The Quadruple fold DiamonLock naturally gives greater security and is recommended for products of such consistency as not to seep through the folds and corrode the tube and closure. The WESTITE Closure is absolutely leakproof and its bursting strength is, in most cases, greater than that of the tube walls themselves. It is recommended for all products including some tooth pastes and many creams where seepage causes corrosion. The patented "DiamonLock" crimp is used in connection with all three types. Its deep indentations make a neat, tight seal without encroaching upon and weakening the edges of the folds. Send for sample tubes showing these various types of STOKES Clipless Closures.

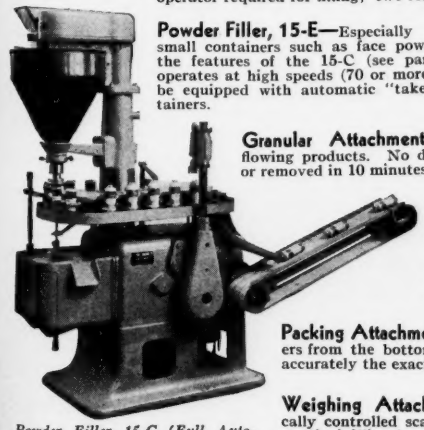
POWDER FILLING EQUIPMENT

STOKES Powder Fillers are designed so that the minimum investment in machinery will adequately equip the user. The 15-B Model can be converted and expanded to the 15-C or 15-E models, the fastest single-auger machines on the market. Besides the machines described below, other machines and attachments are available.

Send for New Catalog, 34-F.

Powder Filler, 15-B (Basic Model) (Illustrated above)
Fills practically any powdered product into tins, boxes, bottles, cans and cartons of various shapes and sizes up to 12" in height. Capacity, 20 to 35 containers per minute. Exceptional accuracy and cleanliness insured by special auger-type filling mechanism, slow-motion agitator and two-step fill. Compactness and simplicity of design save floor space and time in operation. Easily cleaned and quickly "changed-over"; especially suited to the manufacturer with a varied line. As production grows, this machine does not need to be discarded but can be converted and expanded to a full automatic machine.

Powder Filler, 15-C (Illustrated below)—A full-automatic model for large production and sampling. Can also be used as basic model for short runs or special products. Will fill 40 to 50 containers per minute, depending on size and shape of container and the material, and do a clean job. Holders which grasp the containers firmly without marring them, exact indexing and proper timing permit filling at these high speeds without spillage. This machine is the 15-B (basic model) converted and expanded by adding certain attachments such as the container carrier, the "no-can-no-fill" control, and the conveyor and the capper, if desired. One operator required for filling; two for filling and capping.



Powder Filler 15-C (Full Automatic Model)

Powder Filler, 15-E—Especially suitable for filling small containers such as face powder boxes. Has all the features of the 15-C (see paragraph above) but operates at high speeds (70 or more per minute). Can be equipped with automatic "take-off" for filled containers.

Granular Attachment—For filling free-flowing products. No drip. Can be added or removed in 10 minutes.

Dust Collector—A suction dust-collecting nozzle for protecting operators from obnoxious or poisonous dust.

Packing Attachment—Packs containers from the bottom up and measures accurately the exact amount desired.

Weighing Attachment—An electrically controlled scale for weighing, instead of filling by volume; can be supplied if desired.

FULL-AUTOMATIC TUBE FILLING EQUIPMENT

The machine illustrated is our 90DH Full Automatic Filling, Closing and Sealing Machine. It will apply any of the clipless closures mentioned above. It is a versatile production machine suitable for many different products and tube sizes. Capacity 40–50 tubes per minute. Accurate, clean, easily adjusted and quickly "changed-over." Requires but one operator. *Send for special folder.*

SEMI-AUTOMATIC AND HAND-OPERATED TUBE FILLING EQUIPMENT

Tube and Jar Filler, No. 2-C—Handles any material from a liquid to a heavy paste and fills tubes or jars as desired by using proper nozzles and hoppers. Piston-pump type of filling mechanism. Output, 20 to 40 per minute. Belt or motor driven.

Tube Closing Machine, No. 79, No. 179, Series—These machines make a neat, tight fold and apply the STOKES "DiamonLock" Closures or the WESTITE Closure depending on the model. One operator required; output, 30 per minute. Belt or motor driven.

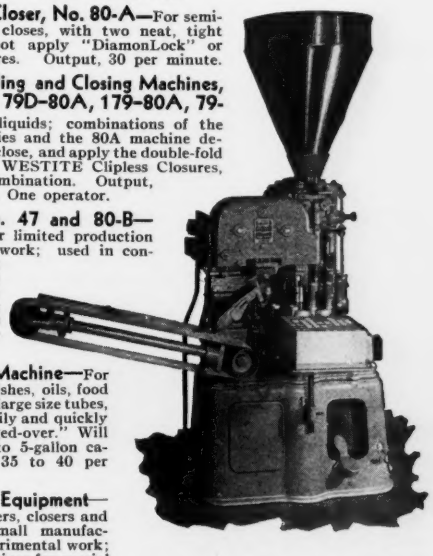
Tube Filler and Closer, No. 80-A—For semi-liquids. Fills and closes, with two neat, tight folds, but does not apply "DiamonLock" or WESTITE Closures. Output, 30 per minute.

Combination Filling and Closing Machines, No. 79H–80A, 79D–80A, 179–80A, 79-80A—For semi-liquids; combinations of the units in the 79 series and the 80A machine described above; fill, close, and apply the double-fold "DiamonLock" or WESTITE Clipless Closures, depending on combination. Output, 30–40 per minute. One operator.

Tube Fillers No. 47 and 80-B—Hand-operated; for limited production and experimental work; used in conjunction with hand-operated Closer and Foot-operated Sealing Press. Output 30 to 40 gross per day.

Simplex Filling Machine—For filling paints, varnishes, oils, food products, etc., into large size tubes, cans and jars. Easily and quickly cleaned and "changed-over." Will fill containers up to 5-gallon capacity. Output, 35 to 40 per minute.

Other Filling Equipment—Hand-operated fillers, closers and clippers for the small manufacturer and for experimental work; special filling machines for special products. Special nozzles, hoppers, and metals furnished to meet individual requirements.



Full Automatic Tube Filler and Closer, 90 DH (Applies STOKES "DiamonLock" and WESTITE Closures)

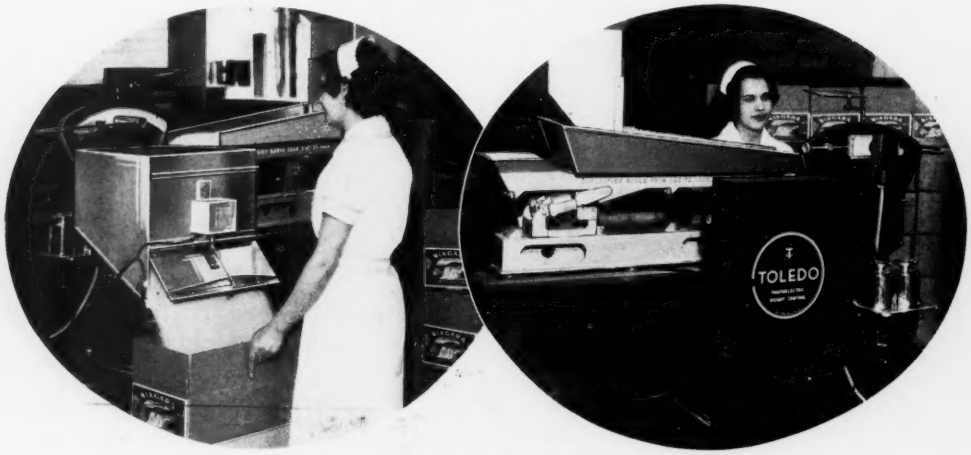
TOLEDO SCALE COMPANY · TOLEDO · OHIO

Automatic Springless Scales for All Net Weight Packing Operations

Canadian Toledo Scale Company, Ltd., Windsor, Ont.

Service and Sales Offices in 181 Cities in United States and Canada

TOLEDO AUTOMATIC WEIGHERS



Just one type of Toledo Automatic Weigher which handles six to eight thousand pounds per day, of as many as 20 different kinds of macaroni. Weighs and fills three 20 lb. packages, seven 4 lb. packages, or twelve 1 lb. packages per minute.

The "Electric Eye Cut Off" controls the feeding, weighing and dumping operations. Maximum accuracy is assured because there is no mechanical contact whatever between this cut-off and the weighing mechanism of the Toledo Automatic Scale. Can be operated at varying speeds depending upon the nature of the product and the accuracy required.

Toledo Automatic Weighers of various types are now being used for handling a wide variety of materials such as macaroni, wheat, granulated sugar, candy, small nails, tacks, zinc oxide, lamp black, etc.

Also used in precision weighing and automatic filling of predetermined amounts of fluids or semi-liquids; and for weighing out predetermined amounts in batching and blending operations. The photo-electric tube "Electric Eye" controls the flow from the solenoid or motor operated valves. For high speed, two valves may be used, one for fast feed and another for dribble feed.

This type of equipment insures a high degree of accuracy by eliminating manual operations and mental calculations.

TOLEDO GRAVITYGRAM SCALE—INDUSTRIAL TYPE

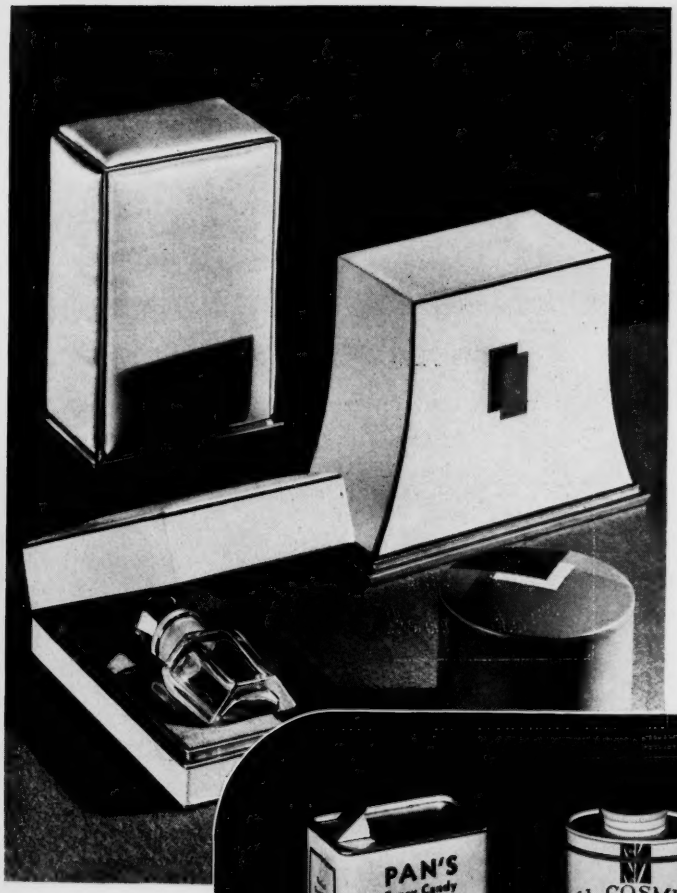
For predetermined weighing operations where material is packed in containers of uniform weight. Capacity—30 pounds. Accurate to 1/1000 of a pound. Toledo pendulum indicating mechanism. Weighs correctly even when out of level. Near Weight Detector standard equipment.

TOLEDO NET WEIGHT PACKING SCALE—BENCH TYPE

For packing predetermined net-weights in containers of uniform weight. Capacity 50 or 100 pounds. Portable type with capacities up to 250 pounds. Traditionally accurate Toledo pendulum indicating mechanism. Under-and-over chart.

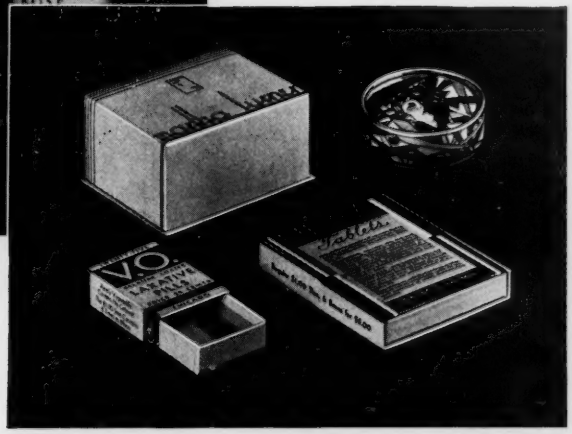
SCALE SURVEYS—Trained representatives of the Toledo Scale Company will make, without obligation, a survey of your particular weighing requirements.

Made in U.S.A.
Under N. R. A.



RITCHIE HAND MADE BOXES radiate the exquisite precision and finish of truly modern craftmanship.

KEEP FAITH WITH YOUR PRODUCT by presenting it in a worthy container. Ritchie Fibre Cans are durable, dependable and appropriate.



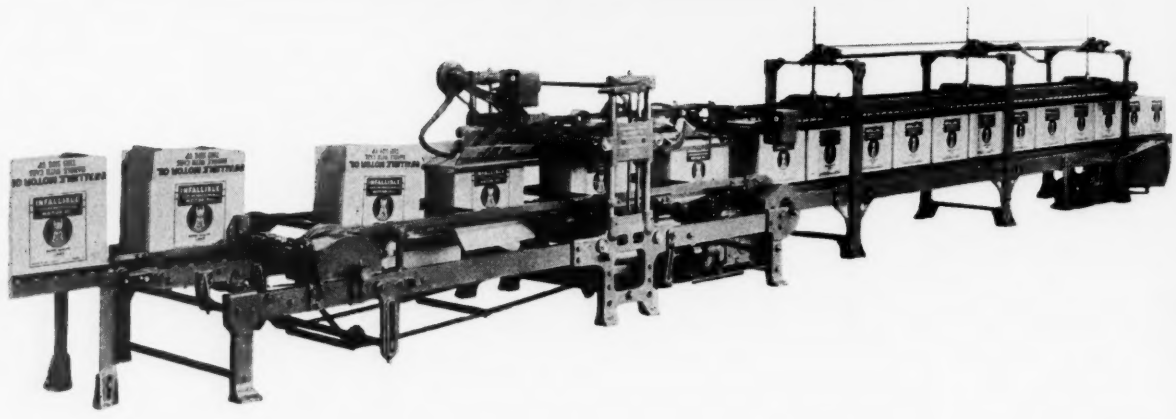
RITCHIE PRODUCTION BOXES are eminently qualified to fill the requirements of your particular product.

W. C. RITCHIE *and* COMPANY

PAPER BOXES — CHICAGO — ALLIED PRODUCTS — FIBRE CANS — NEW YORK

Akron • Cincinnati • Detroit • Minneapolis • St. Paul • St. Louis • Los Angeles • Nashville • Louisville • Memphis

THIS STANDARD SEALS CASES FOR LESS THAN 1/10c EACH



Case sealing can be a difficult, tedious, troublesome and expensive part of production. Or, as in the thousands of plants where Standard Case Sealers are used, it can be the most efficient and inexpensive production operation. In these plants, Standard Case Sealers are effecting this low-cost sealing on production from as low as 50 to as high as 2500 cases per hour—automatically gluing and sealing both ends of the filled shipping case—while the case is in motion—at less than $1.00 per thousand cases.

NO OPERATOR IS REQUIRED

The services of our Engineering Department are at your disposal. We will gladly make a survey of your package or can handling requirements and submit layouts, showing how to most economically take care of such requirements. Write or wire for our representative to call at your plant.

STANDARD-KNAPP CORPORATION

43-27 33rd Street, LONG ISLAND CITY, N. Y.
208 W. Washington Street, CHICAGO
1001 Society for Sav. Bldg., CLEVELAND
189 Second Street, SAN FRANCISCO

SWEETONE PAPER PRODUCTS

PADOCEL

Soft and resilient to an unusual degree. Padocel is ideal as a protective wrapping or packing for fragile products of all kinds.

Its cushion-like quality absorbs the shocks resulting from rough handling of shipments in transit, and insures safety of product until it reaches destination.

Its slight, extra cost is negligible compared to the savings effected and the good-will retained by the use of the material.

Padocel is available in several thicknesses or plies—with different types of paper for backing. The accompanying sample is 9 ply, M. G. Kraft backed, line embossed.

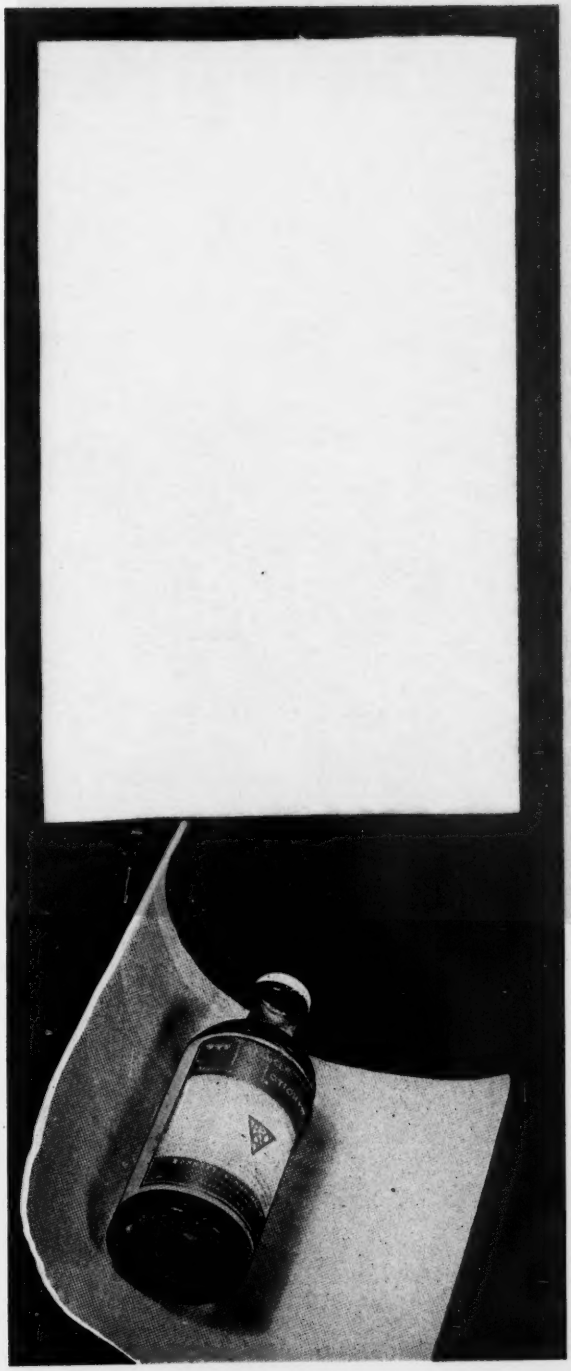
Send us one of your standard containers or packages, or one of the articles to be protected—and we will return it properly wrapped, together with quotation on material.

★

Globular Parchment	Glassine (Plain or Embossed)
Beverage Mats	Wax Papers
Corrugated Parchment	Dipping Papers
Waxed Layer Board	Cover Papers
Chocolate Board	Special Wrappings
Chocolate Dividers	Tinsel Ribbons
Box Partitions	Gold Cord
Box Liners	Tissues
Shredded Packing Materials	Fancy Papers

Flossine,
The Candy Mat Supreme.

Flossine, the pattern embossed cellulose padding with *glassine* back, while especially designed for candy package work, is now used extensively by manufacturers of perfumes, drugs, novelties, etc., to lend a touch of beauty to the pad by its attractive diamond pattern.



George H. Sweetnam, Inc.

Specialists in the Packaging Field

282-288 Portland Street

Cambridge - - - Mass.

REPRESENTATIVES

Geo. A. Kaas . . . . . 7 Front St., San Francisco
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Fred C. Cooper . . . . . 3789 Menlo Ave., Los Angeles

These paper bags are packed and sealed on the new Arenco Type VUM Flour Packing Machine. This machine automatically fills, weighs, closes, seals, and checks the weight at a speed of fifteen 5-pound or 10-pound bags per minute, with extremely close tolerances.

The Arenco Tablet Packing Machine, Type VYP, forms packages from blanks and fills them at the rate of fifty per minute, with or without inner liner and outside seal. Suitable for tablets, pills, throat lozenges, hard candies, etc.

We also manufacture all types of machines for the tobacco industries

Packing machines for cartridges, hard bread, etc.

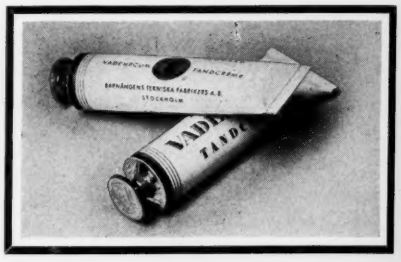
Labeling and wrapping machines

Soda straw and tooth pick wrapping machines

Weighing machines for coffee, sugar, cereals, etc.

Unit humidifiers

Special machines developed and built on contract



Tubes from the new Arenco Type GAB Tube Filling and Closing Machine. Automatic turning of the tubes to register print with the closure, and automatic cap tightening. Speed forty to forty-five tubes per minute, with or without clip. Clean filling without spattering of the inside closure wall.

Offices and agents in all the principal countries of the world

ARENCO MACHINE COMPANY, Inc.

25 WEST 43RD STREET — ARENCO — NEW YORK, N. Y.

XUM

[illegible] LEAD METALS
[illegible] SCREENING TINTS
[illegible] SAYS SMART

[illegible] combination

[illegible]

[illegible] assistance is
[illegible] covered, or
[illegible] a more
[illegible] package.
[illegible] for the
[illegible] the large.
[illegible] line.

[illegible]

[illegible] COMPANY

SMITHCRAFTED CONTAINERS *Aid Sales*

SMITHCRAFTER

"A visual expression of quality"—one user of *Smithcrafted* containers calls them. And because they do express quality and suggest the *"higher price brackets"* for your merchandise they can help you sell against price competition. They can lift your merchandise out of the rut of the *"ordinary"* levels and impress upon the purchaser that here is excess value—value that justifies a higher price and that is a bargain at that higher price.

THE richly decorated designs, the leather like feel of these beautifully designed containers invites inspection of them and their contents and create a desire for ownership that decides in the favor of your merchandise rather than in favor of competitive merchandise packed in the usual wood, paper, metal or plastic container always associated with the cheaper lines of merchandise selling from ten cents up.

SMITH CRAFTED CHICAGO

TELL us your container problems—we will be glad to suggest the right *Smithcrafted* container to meet your specific needs—or if *Smithcrafted* containers are out of the picture because of price or other limitations we will promptly say so. Write today to

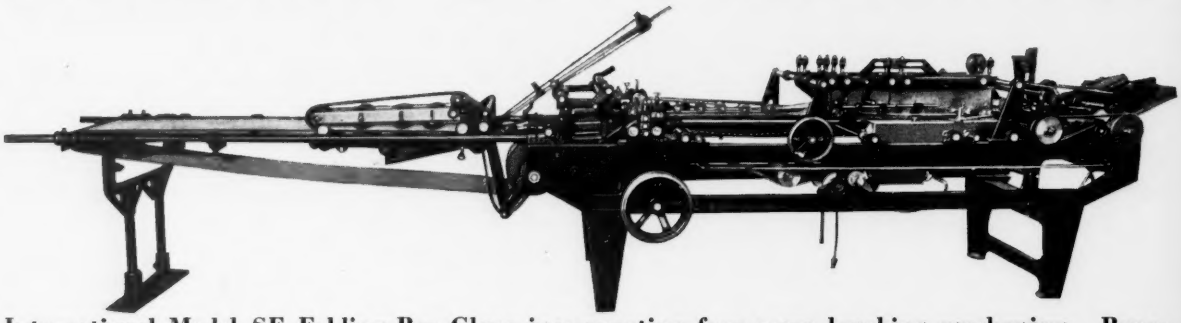
A. A. Lubersky, Sales Manager

The S. K. Smith Company

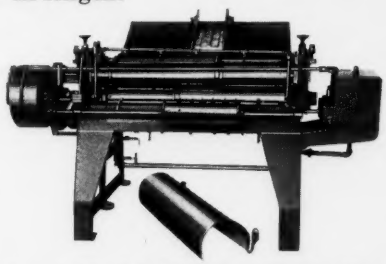
2867 North Western Avenue, Chicago

P.S. The cost of a *Smithcrafted* container is not nearly as great as their beauty, durability and value suggest—you'll be surprised to learn how low the price can be in quantities of 5000 or more.

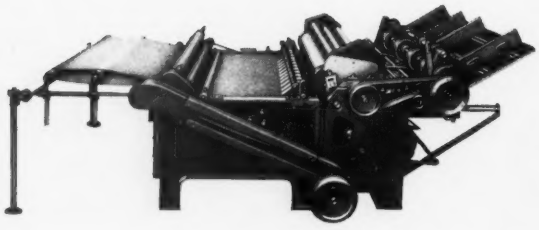
INTERNATIONAL
FOLDING BOX MACHINES



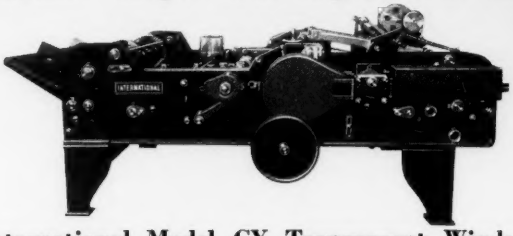
International Model SF Folding Box Gluer incorporating four score breaking mechanism. Range ¾″ to 6″ folded flat, 1⅞″ to 20″ in length.



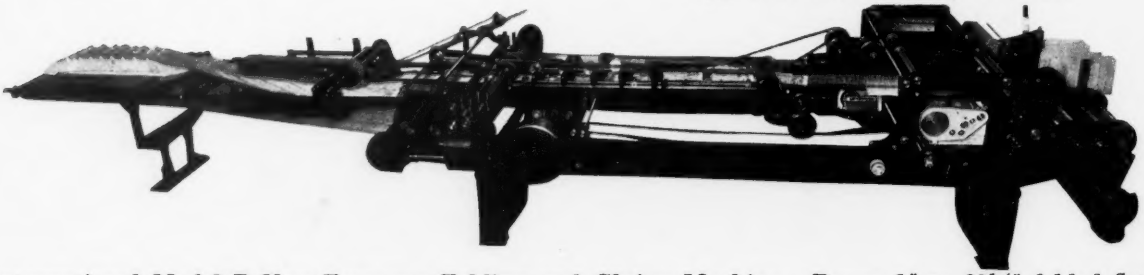
International Model 2P Hot Finish Paraffining Machine for coating either one or both sides of blanks or sheets leaving glue margins free of paraffine. Range 4″ to 36″ long, 5½″ to 22″ wide.



International Model RW High Gloss Paraffining Machine for making butter, lard, and ice cream cartons. Range 6″ to 45″ in length, 2″ to 45″ in width.



International Model CY Transparent Window Machine. Range small size blank 3″ long by 3½″ wide to 19″ long by 35″ wide; large size 3″ long by 3½″ wide to 38″ long by 35″ wide.



International Model B New Economy Folding and Gluing Machine. Range 1″ to 20½″ folded flat, 3″ to 40″ in length

INTERNATIONAL PAPER BOX MACHINE CO.

NASHUA, N. H., U. S. A.

English representatives
Andrew & Suter
23 Goswell Road
London, E.C.I, England

Canadian representatives
Manton Bros. Co.
97 Elizabeth St.
Toronto, Ont.

XUM

A ROUND-UP OF PACKAGES PROTECTED AND BEAUTIFIED WITH SYLPHRAP AND SYLPHSEAL

SYLPHRAP—plain, or printed in multicolor, offers to the manufacturer of any product the perfect wrap—a wrap so crystal clear in transparency that it enhances in beauty even the most attractive package or product, and at the same time preserves and protects the product.

SYLPHRAP is made in plain white, grease-proof or moisture-proof, and in eleven beautiful, sparkling colors.

SYLPHSEAL caps the bottle closure, effects a tight, durable seal and prevents tampering with the contents of the container.

SYLPHSEAL is made in High Gloss Enamel (U.S. Pat.), Silky Lustre (U.S. Pat. applied for), Regular Transparent, Mat Opaque and Metallic Bronze — in color to match closure or label—plain or printed with trade name or trade mark.

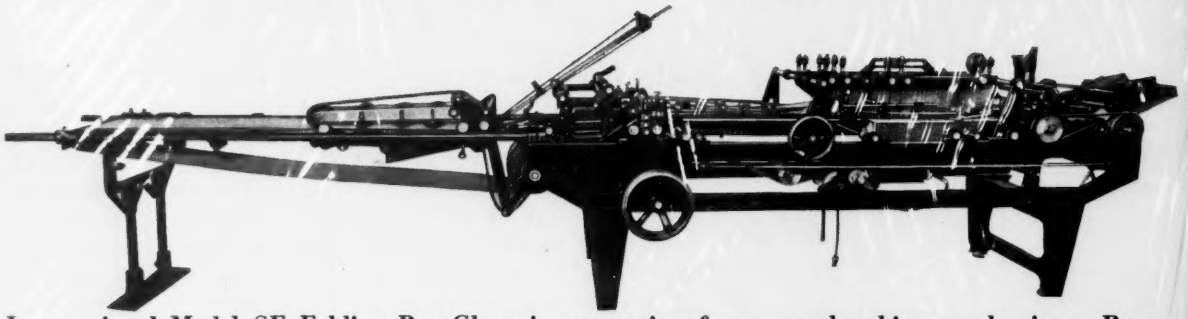
SYLVANIA INDUSTRIAL CORPORATION

Executive and Sales Offices: 122 East 42nd Street, New York

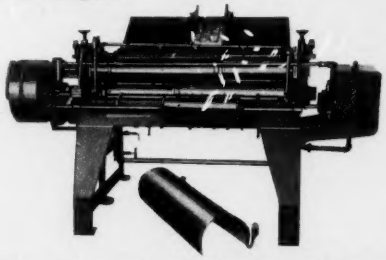
Works: Fredericksburg, Va.

For increasing and maintaining sales of your product, use SYLPHRAP and SYLPHSEAL.

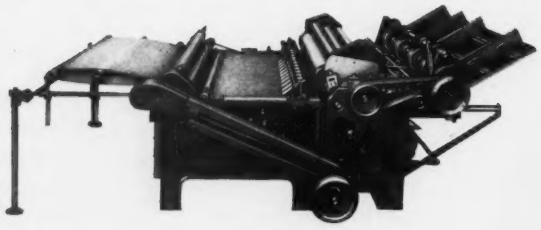
INTERNATIONAL
FOLDING BOX MACHINES



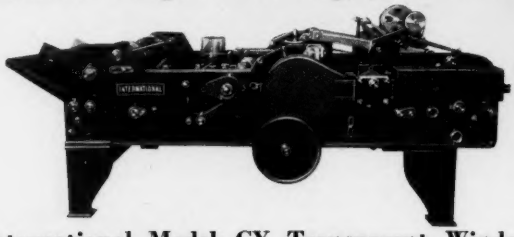
International Model SF Folding Box Gluer incorporating four score breaking mechanism. Range 3/4″ to 6″ folded flat, 1 1/8″ to 20″ in length.



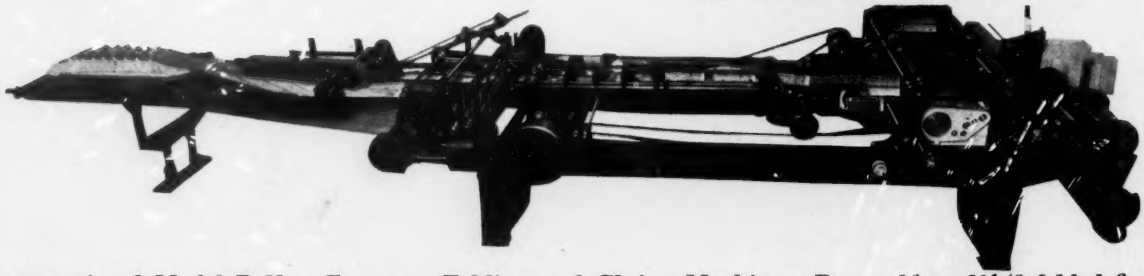
International Model 2P Hot Finish Paraffining Machine for coating either one or both sides of blanks or sheets leaving glue margins free of paraffine. Range 4″ to 36″ long, 5 1/2″ to 22″ wide.



International Model RW High Gloss Paraffining Machine for making butter, lard, and ice cream cartons. Range 6″ to 45″ in length, 2″ to 45″ in width.



International Model CY Transparent Window Machine. Range small size blank 3″ long by 3 1/2″ wide to 19″ long by 35″ wide; large size 3″ long by 3 1/2″ wide to 38″ long by 35″ wide.



International Model B New Economy Folding and Gluing Machine. Range 1″ to 20 1/2″ folded flat, 3″ to 40″ in length

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A ROUND-UP OF PACKAGES PROTECTED AND BEAUTIFIED WITH SYLPHRAP AND SYLPHSEAL

SYLPHRAP—plain, or printed in multicolor, offers to the manufacturer of any product the perfect wrap—a wrap so crystal clear in transparency that it enhances in beauty even the most attractive package or product, and at the same time preserves and protects the product.

SYLPHRAP is made in plain white, grease-proof or moisture-proof, and in eleven beautiful, sparkling colors.

SYLPHSEAL caps the bottle closure, effects a tight, durable seal and prevents tampering with the contents of the container.

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Executive and Sales Offices: 122 East 42nd Street, New York

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For increasing and maintaining sales of your product, use SYLPHRAP and SYLPHSEAL.

TODAY

Your labels must be both

MODERN and INEXPENSIVE

Tompkins' Labels are meeting these exacting demands for many prominent firms.

May we explain our plan, no obligation.

FOR MODERN, INEXPENSIVE, QUALITY LABELS-

IT WILL PAY YOU TO CALL ON–

TOMPKINS' LABEL SERVICE

MANUFACTURERS

FRANKFORD AVE. *at* ALLEGHENY AVE., PHILA.

NOW—

Hold bottom of box toward you loosely with palms of hands on ends. Press hands toward each other.

Pull lightly toward ends, tuck in flaps.

with National distribution and used by scores of THE NATION'S MOST SUCCESSFUL MERCHANDISERS

THE SIMPLEX BOX

"The Solution To The Set-Up-Box Problem"

Because Simplex are stronger—
Because Simplex save time—
Because Simplex save floor space—
Because Simplex reduce cost—

Hosiery, Shoes, Shirts, Knitwear, Sheets, Blankets, Towels, Underwear, Infants' Wear, Hardware, Candy, Chemical and Medicinal Preparations, Cosmetics, Soaps, Meat and Food products are packed in Simplex Boxes.

Because Simplex will save time, money and floor space in the packaging of your product—it may be wise to investigate. Of course—we will welcome your demand for details.

Close fingers on top of flaps, bend down.

ERECTED IN ONE SECOND

A simple twist, and two flat pieces emerge a perfect set-up box. Much stronger—due to double wall construction. Adaptable to any merchandise.

NATION WIDE

Leading manufacturers of paper boxes throughout America now licensed to make Simplex boxes. Drop us a card that we may advise you as to your closest source of supply.

SIMPLEX

THE SIMPLEX PAPER BOX CORPORATION

LITITZ - - - PENNSYLVANIA

ADHESIVES–

MUST keep step with the modern advancement of all industries into which they enter. Upaco Adhesive Research is constantly in line with this progress. YOUR Adhesive problem is anticipated by the Upaco laboratory. A Upaco Adhesive for every type and purpose.

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200 BOSTON AVE MEDFORD, MASS.

JOHN WALDRON CORPORATION

Paper Converting Machinery

Main Office and Works ~ NEW BRUNSWICK, N. J.

NEW YORK
350 Madison Ave.

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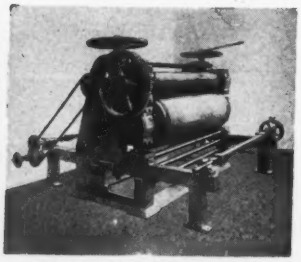
201 North Wells St.

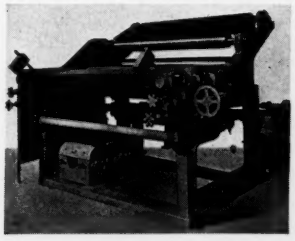
WALDRON MACHINES
OVER A CENTURY OF EXPERIENCE
BUILDING PAPER CONVERTING MACHINES
SINCE 1827

PORTLAND, ORE.
2860 N. W. Front Ave.



"Centennial" Embossing Machine

EMBOSSING MACHINES
LAMINATING MACHINES
SLITTING MACHINES
COATING MACHINES
and DRYERS
WAXING MACHINES



Roll Coating Machine

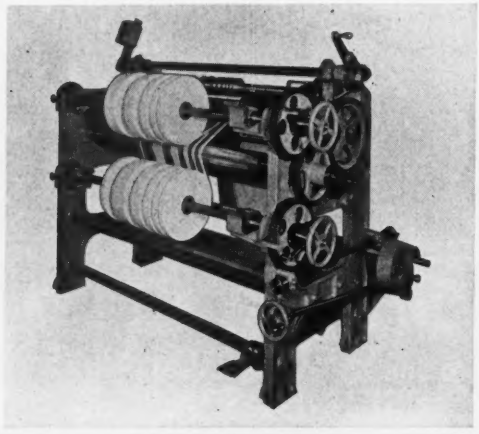
Waldron Embossing Machines are built in a range of types for producing desired effects on any material embossed with roll embossers. Each machine rigidly built and correctly designed and proportioned with respect to the important factors of speed, pressure and tension for particular requirements. Waldron machines provide an almost unlimited variety of original distinctive designs and effects.

Waldron Embossing Rolls

with longer life as a result of use of carefully conditioned paper and harder surface. Correctly proportioned shafts and heads. Waldron Rolls can be relied upon to give many extra service hours.

Waldron Slitting Machines

Various types of slitting machines including the new slitter for "Cellophane" illustrated below. This machine is designed to provide individual control for each strip. Cuts with shear edge eliminating cracked edges. Heavy Waldron construction assures speedy, smooth, trouble-free operation.



Waldron Slitter for "Cellophane"

Waldron Coating Machines are available in knife, combination roll and knife, or brush type, covering the entire range of coating requirements. Regardless of the kind of coating material used—thin staining material for tints, waterproof material, varnish or lacquer—a Waldron machine can be depended upon to apply it faster, smoother and better.

Drying apparatus for use in connection with Waldron Coating Machines designed to fit into particular layout and to meet existing processing requirements.

Waldron Laminating Machines

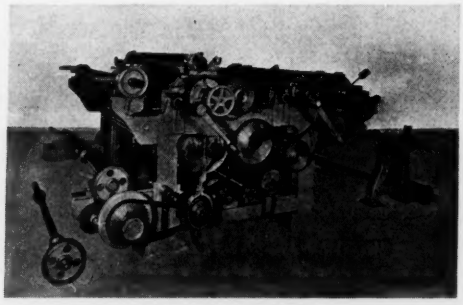
for the combining of cloth, paper, "Cellophane" and boards with use of lacquer, latex, hot melts or cold adhesives. Ideal for applying adhesive to "Cellophane" smoothly and without "ribbing".

Waldron Waxing Machines

of heavy construction suitable for high speed operation with either water bath for high luster or cylinder chilling rolls with brine. Nashua-Kalamazoo licensed suction method for water removal used when run with water dip method of chilling.

Engineering Service

Utilize Waldron's century and more of experience to assist in solving your particular processing and production problems. Inquiries of any nature invited and treated in confidence.



Waldron Laminating Machine

PYRO·MET

PYRO - MET

GOLD – SILVER – COPPER

A new name in the Metallic paper field for our Improved Pyroxylin Coated Paper

East

NEW YORK
41 Park Row
WOrth 2-2070

Mid-west

CHICAGO
536 So. Clark Street
Webster 2180

West

SAN FRANCISCO
ROBERT C. BISHOP
Representative
461 Market Street
Sutter 3544

Canada

TORONTO
E. H. WILKINSON & CO., LTD.
Agent
19 Melinda Street
Elgin 3549

Weights suitable for

- BOX COVERINGS
- DIRECT MAIL PIECES
- EDGINGS
- FOLDERS
- FOLDING CARTONS
- LABELS—MENUS
- GREETING CARDS

Distinctive qualities are

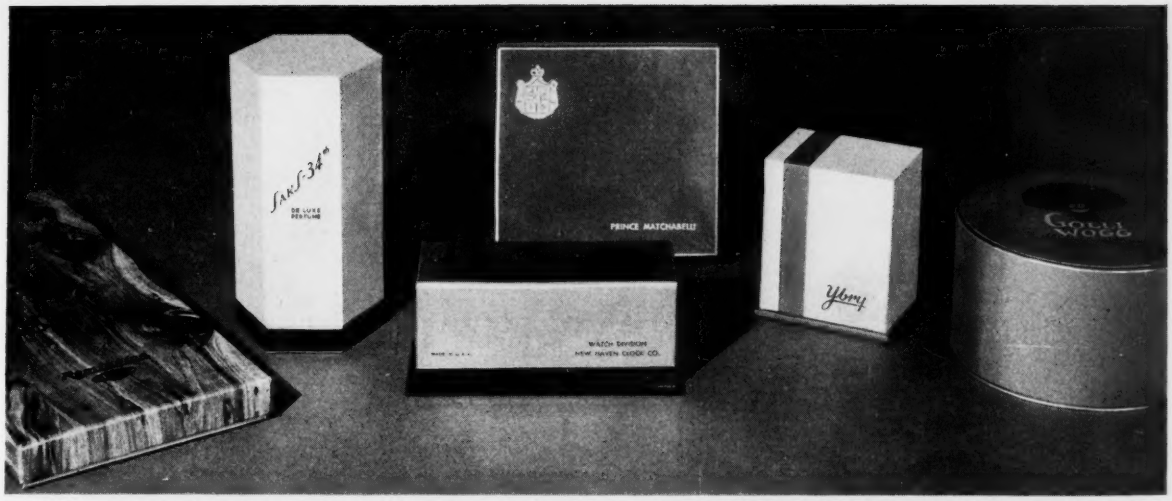
- RICH LUSTRE
- UNIFORM FINISH
- RUB PROOF
- WATERPROOF
- DURABILITY
- PRINTING SURFACE
- EMBOSSING QUALITY

As one of the Pioneers in the manufacture of Metallic Coated Papers we are proud to present

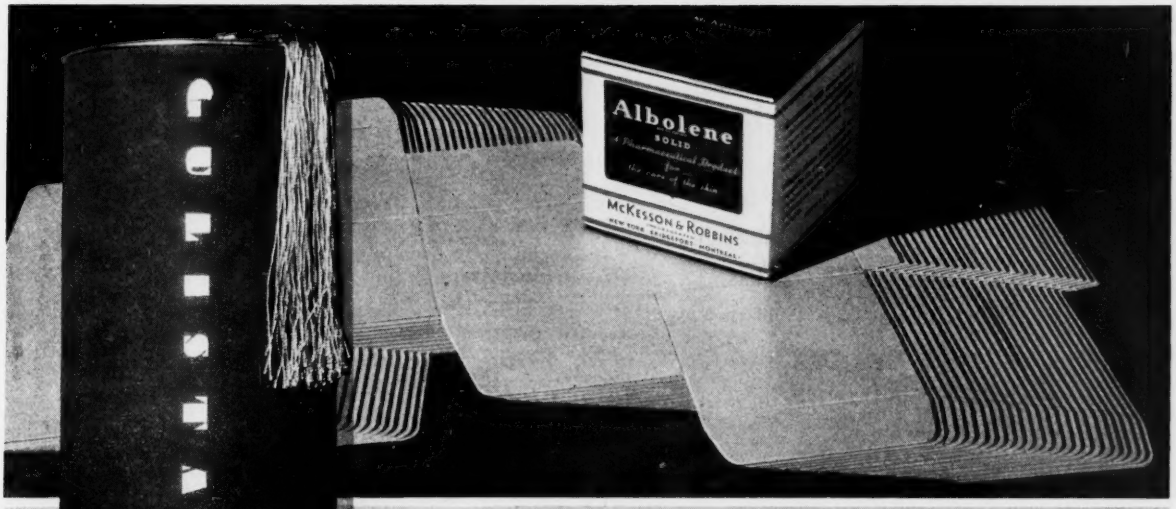
PYRO-MET

SPRINGFIELD GLAZED PAPER COMPANY
SPRINGFIELD, MASSACHUSETTS

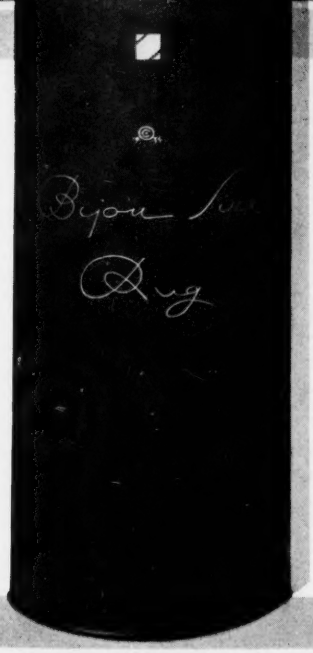
Established 1874



HAND-MADE AND SET-UP BOXES



FOLDING BOXES



WARNERCRAFT

THE FINEST WORD IN PACKAGING

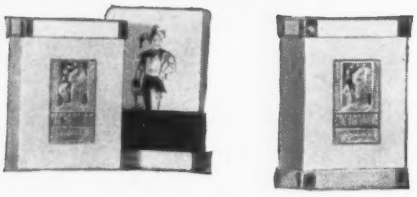
Through our merchandising sense of design, our care in the maintenance of equipment, practical skill in construction, and insistence in the selection of paper material, we have succeeded in producing containers that have reduced costs or increased sales for those who appreciate the importance of quality packaging.

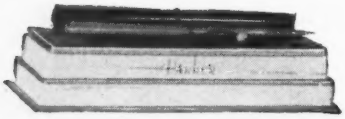
THE WARNER BROTHERS COMPANY

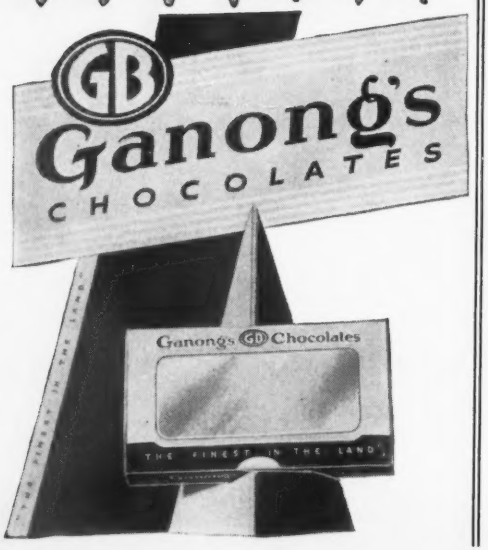
BRIDGEPORT, CONNECTICUT

200 MADISON AVENUE • NEW YORK • ASHLAND 4-1195

PRECISE WORKMANSHIP







Names—

—A roster of Somerville clients would sound like a roll-call of representative Canadian industry and commerce.

—A catalogue of Somerville services would also be surprisingly extensive in its detail of marketing assistance.

—To Canadian manufacturers Somervilles offer a packaging service designed to create bigger and better sales.

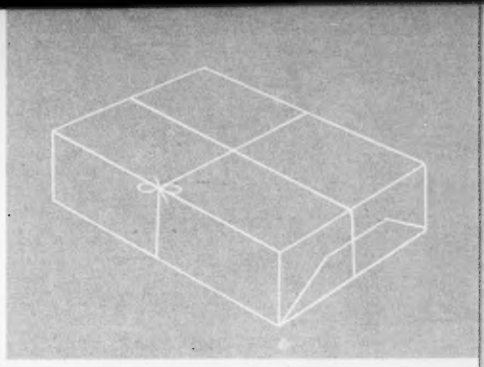
—To American firms with Canadian associations or ambitions Somervilles offer a similar service, all the more attractive because it is based on knowledge and experience of Canadian merchandising situations, and the ability to cope with them successfully.

—Opportunities for discussion of package aids to merchandising are solicited. Plans and suggestions will be submitted without obligation.

SOMERVILLE PAPER BOXES

LIMITED

LONDON	CANADA
MONTREAL	WALKERVILLE
TORONTO	WINNIPEG



from

PACKAGE

EVERY COLOR-PRINTING NEED

through

UNIFIED "US" SERVICE

to . .

POSTER

THE UNITED STATES PRINTING & LITHOGRAPH COMPANY

"A Nation-Wide Service"

from
PACKAGE *to* POSTER
THROUGH THE *UNIFIED SERVICE* OF

THE UNITED STATES PRINTING &

Colorful little package for Bayuk "Little Phillies" and (at right) counter container in closed position. Both made at the Cincinnati "U S" plant.

EVERY NEED IN COLOR PRINTING

ONE SOURCE OF SUPPLY furnished all of the materials illustrated at the right, for Bayuk Cigars, Inc., Philadelphia. That one source of supply, in its seven plants, has the equipment and facilities required to produce every need in color printing.

ONE ORGANIZATION contacted the user of these materials. In that organization is an immense personnel with a collective experience which covers not only every method of color reproduction, but also the thousand and one different forms of marketing, advertising, and merchandising used by the leaders in America's industrial activities. That personnel is trained to co-ordinate its diversified abilities and act as a unit.

ONE PURPOSE is the fundamental which underlies all these different materials. The ONE source of supply, and the ONE teamed personnel, keeps that ONE purpose constantly in mind. The result is that these varied materials — packages, counter cards, window displays, posters — all have a UNITY which increases their attractiveness and — more important — multiplies their power to carry out the single function of selling Bayuk Cigars.

Unified "US" Service is at your disposal

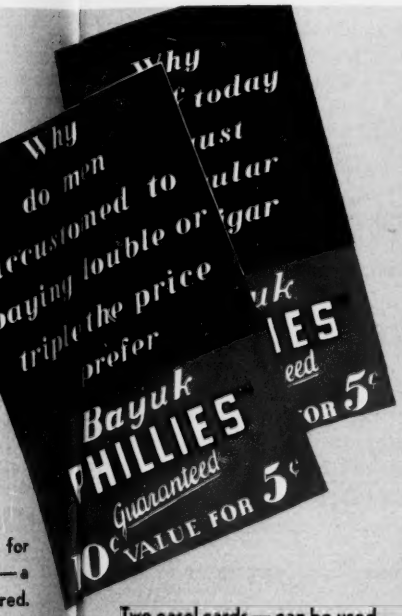
Container and "five-pack" carton for Bayuk Phillies, open as on counter — a product-display that can't be ignored. Made in the Cincinnati "U S" Plant.

A window display that is an "eye stopper" — size well calculated to insure USE by retailers. Made in the Brooklyn "U S" Plant.

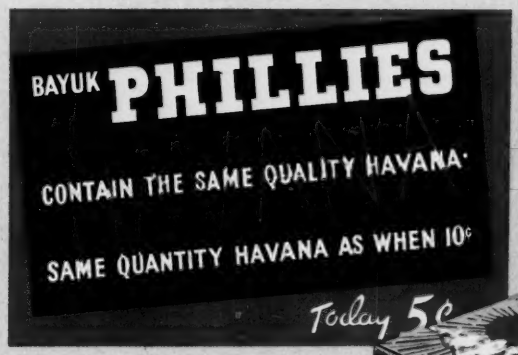
XUM

Christmas box wraps for Bayuk Phillies glowing with Yuletide spirit. Made in the Buffalo "U S" Plant.

NG & LITHOGRAPH COMPANY



Two easel cards — can be used separately on counter or in conjunction with larger window display. Made in the Brooklyn "U S" Plant.



(Above) Window poster, with colors adapted to the changing lights and shadows of store windows. Made in the Brooklyn "U S" Plant.

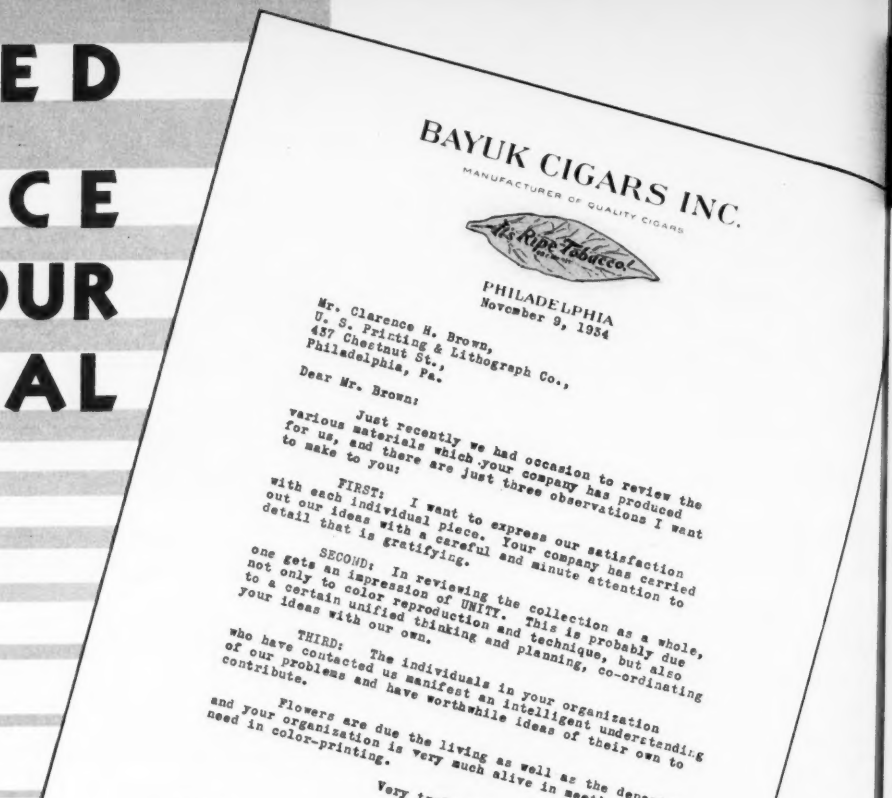
(Below) Christmas tuck-end carton for gift package of ten Bayuk Phillies. Made in the Cincinnati "U S" Plant.

Out in the open — this poster blazons Bayuk Phillies — reminder and suggestion unescapable. Made in the Erie "U S" Plant.

FROM PACKAGE TO POSTER
through
UNIFIED "U S" SERVICE

XUM

UNIFIED "U S" SERVICE IS AT YOUR DISPOSAL



BAYUK CIGARS INC.
MANUFACTURER OF QUALITY CIGARS

It's Ripe Tobacco!

PHILADELPHIA
November 9, 1934

Mr. Clarence H. Brown,
U. S. Printing & Lithograph Co.,
487 Chestnut St.,
Philadelphia, Pa.

Dear Mr. Brown:

Just recently we had occasion to review the various materials which your company has produced for us, and there are just three observations I want to make to you:

FIRST: I want to express our satisfaction with each individual piece. Your company has carried out our ideas with a careful and minute attention to detail that is gratifying.

SECOND: In reviewing the collection as a whole, one gets an impression of UNITY. This is probably due not only to color reproduction and technique, but also to a certain unified thinking and planning, co-ordinating your ideas with our own.

THIRD: The individuals in your organization who have contacted us manifest an intelligent understanding of our problems and have worthwhile ideas of their own to contribute.

Flowers are due the living as well as the departed; and your organization is very much alive in meeting our need in color-printing.

Very truly yours,

AJH:S

V. P. & Genl. Sales Mgr.
BAYUK CIGARS INCORPORATED

CHARLES THOMSON HAVANA RIBBON MAPACUBA BAYUK PHILLIES PRINCE HAMLET

Behind any successful product is a merchandising plan. With "U S" that plan is in the foreground during the preparatory work on packages and "sales-spot" advertising. Tested ability to originate or apply marketing ideas to color printing — that factor of safety is yours when you put your problems in "U S" hands.

THERE IS A "U S" SERVICE OFFICE NEAR YOU

Atlanta, Ga.
Baltimore, Md.
Boston, Mass.
Brooklyn, N. Y.
Buffalo, N. Y.
Chicago, Ill.
Cincinnati, Ohio
Cleveland, Ohio
Detroit, Mich.
Erie, Pa.
Indianapolis, Ind.
Kansas City, Mo.
Los Angeles, Cal.
Minneapolis, Minn.
Newport, Ky.
New York City
Philadelphia, Pa.
Pittsburgh, Pa.
St. Louis, Mo.
San Francisco, Calif.
Seattle, Wash.

ALL MODERN COLOR PROCESSES ARE EMPLOYED IN

Cincinnati, Ohio
Brooklyn, N. Y.
Baltimore, Md.
Chicago, Ill.
Buffalo, N. Y.
Newport, Ky.
Erie, Pa.

THE PLANTS OF "U S" AND ASSOCIATED COMPANIES

THE UNITED STATES PRINTING & LITHOGRAPH COMPANY

U. S. BOTTLERS MACHINERY CO.

4015-4031 No. Rockwell Street Offices in all principal cities Chicago, Illinois

MANUFACTURERS OF

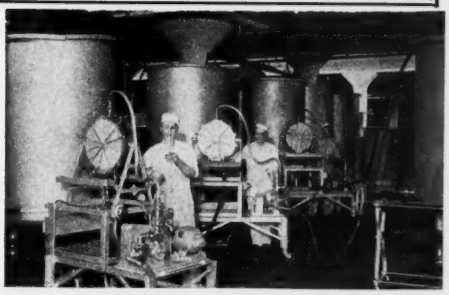
HAND Operated Equipment; Semi-Automatic Machines; Full Automatic Machines for Liquids, Semi-liquids or Semi-solids.

- Cappers (hand, semi or full automatic)
- Conveyors (belt or gravity)
- Corkers (hand, semi or full automatic)
- Dryers (for bottles and cans, semi or full automatic)
- Fillers (vacuum type, accurate measure type, piston type, syphon type, hand operated, semi or full automatic)
- Pasteurizers (hand fed, progressive or continuous automatic)
- Preheaters (semi or full automatic)
- Rinsers (hand, semi or full automatic)
- Tanks (wood, glass-lined, stainless steel or copper)
- Vacuum bottle cleaning and filling (built in a single machine with one dual head)
- Washers (semi or full automatic for bottles, jars and cans)
- Water Stills (exclusive manufacturers of the famous "Polarstils")

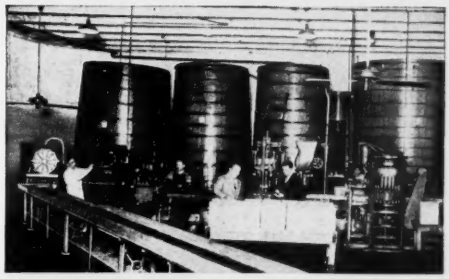
U. S. engineering service is available to help you solve your bottling problems. If you wish to personally visit U. S. engineered plants, we will be glad to tell you where they are located and arrange a visit.

SOME TYPICAL U. S. INSTALLATIONS

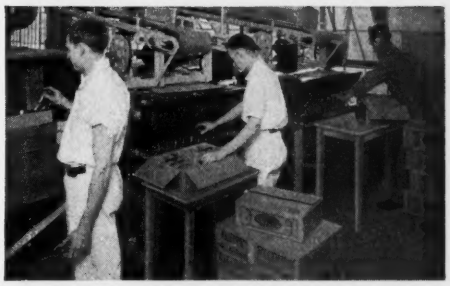
shown below



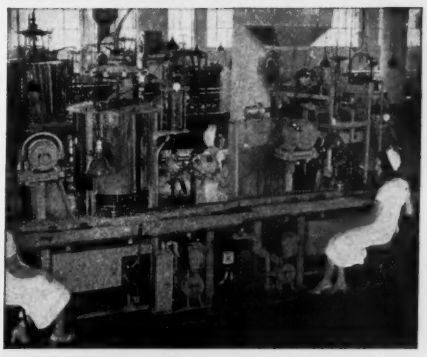
View of a battery of U. S. Filters used by one of the largest drug manufacturers in this country.



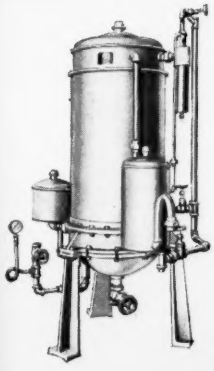
U. S. engineered California Wine Producer's bottling plant using a complete automatic line.



An installation of U. S. "Cascade" Washers together with U. S. drying and conveying equipment used in a prominent food product plant.



View of a well-known pharmaceutical plant which has three complete lines of washing, drying, filling and packaging equipment furnished by U. S.



WATER STILLS

Industrial, laboratory, hospital and marine types in all capacities.

We are exclusive manufacturers of the famous Polar Water Stills manufactured under the A.C. Jewell patents.

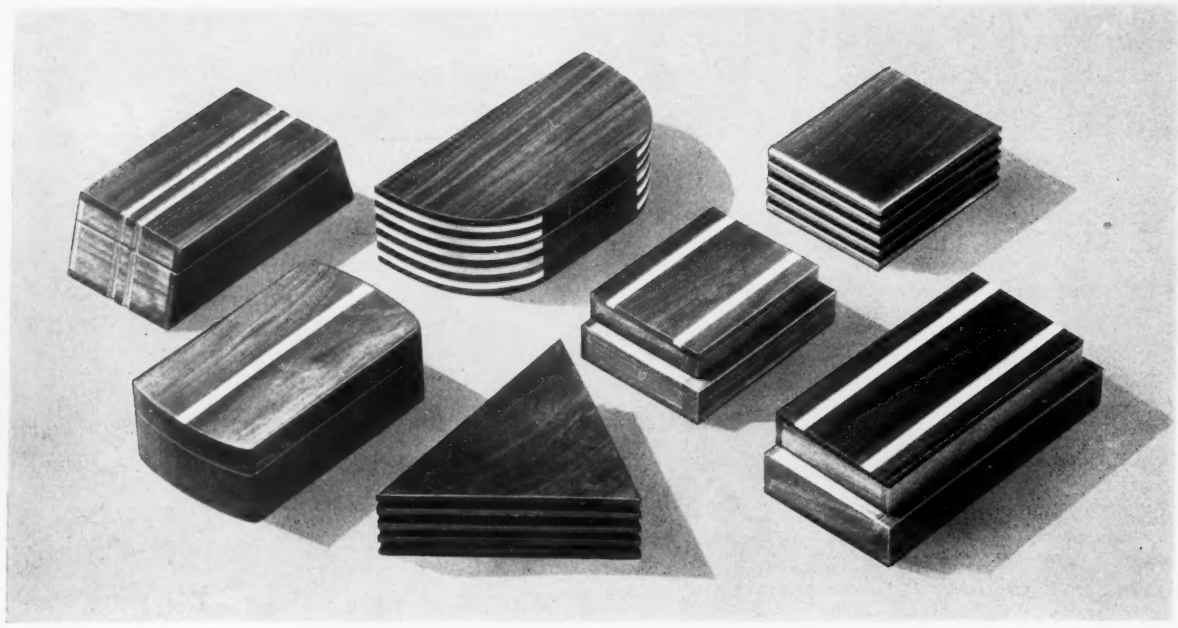
MORE OUTPUT WITH LESS LABOR

BOTTLING and PACKAGING ENGINEERS

Manufacturers of

Bottle Washers, Fillers, Filters, Corkers, Cappers, Conveying Machinery, Bottling Machinery and Water Stills.

MORE OUTPUT WITH LESS LABOR



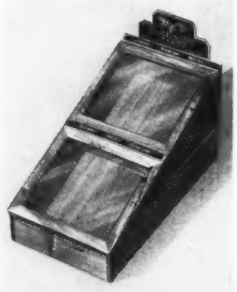
CONSIDER THE HIGH RE-USE VALUE
OF
Containers in Cedar and Walnut Wood
"Always Appropriate"
Designed to Suit the Product and Styled for Appeal

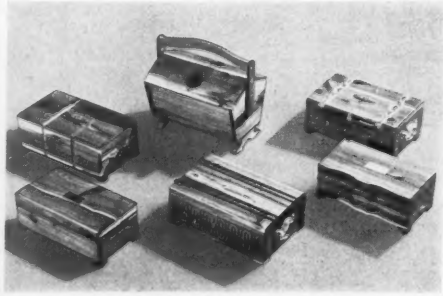
Your product enclosed in a wooden container, appropriately designed and styled, arouses "desire-to-own" and overcomes resistance at the point of sale.

◆

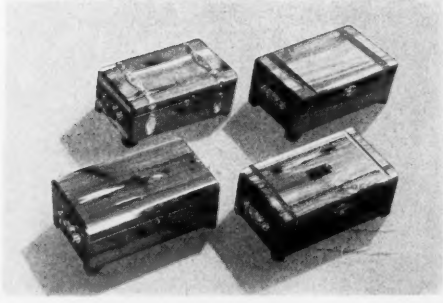
The low cost of these containers does not take your product out of its price class.— Our experience and suggestions can help you in selecting an enclosure.

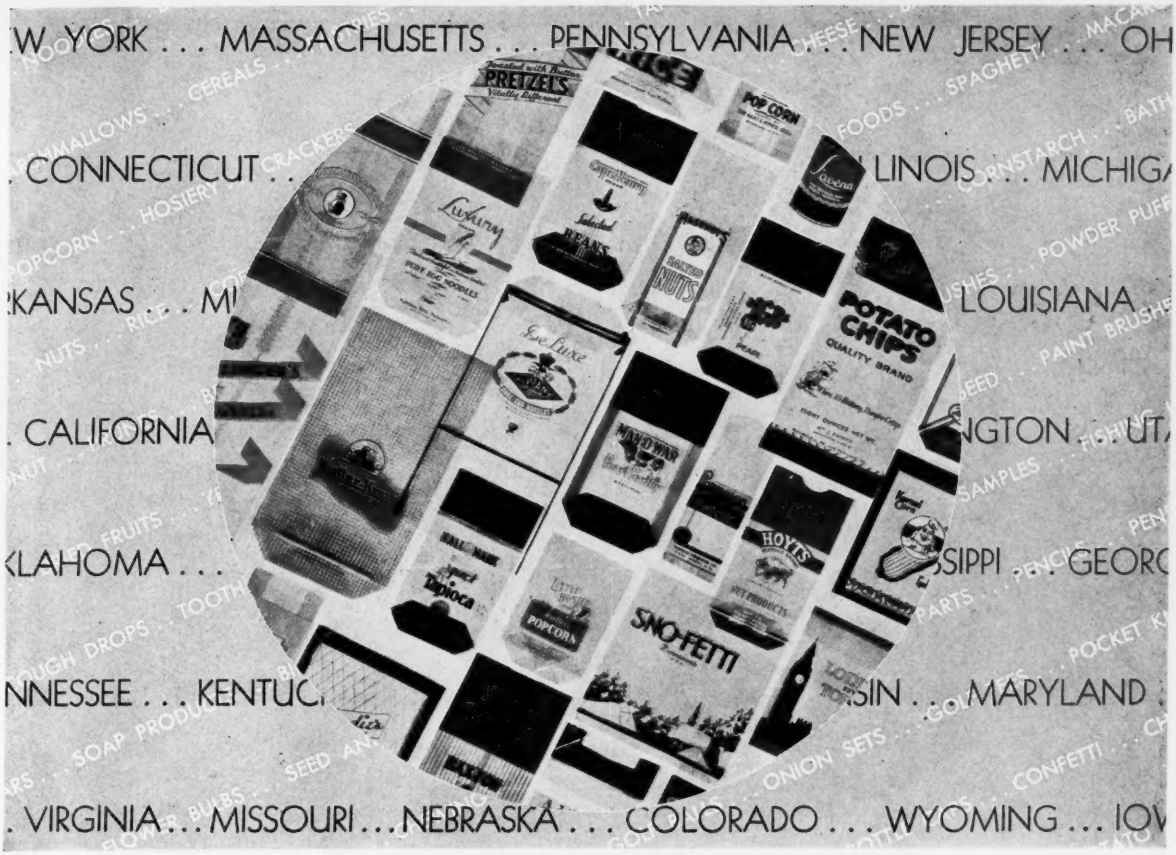
◆





PETERSON BROTHERS
165
NORTH ELIZABETH STREET
CHICAGO, ILLINOIS




W YORK . . . MASSACHUSETTS . . . PENNSYLVANIA . . . NEW JERSEY . . . OH
CONNECTICUT . . .
LINOIS . . . MICHIG
KANSAS . . . M
LOUISIANA
CALIFORNIA
NGTON . . . UT
KLAHOMA . . .
SIPPI . . . GEORG
NNESSEE . . . KENTUC
SIN . . . MARYLAND
VIRGINIA . . . MISSOURI . . . NEBRASKA . . . COLORADO . . . WYOMING . . . IO
PRETZELS
POP CORN
POTATO CHIPS
QUALITY BRAND
SNO-FETTI
HOYTS
Tapioca
POPCORN

THE CHOICE PRODUCTS OF HUNDREDS OF MANUFACTURERS IN EVERY CITY AND STATE OF THE UNION GO TO MARKET IN

DOBECKMUN BAGS AND WRAPS OF CELLOPHANE

• The snap and sparkle of Dobeckmun design and printing have contributed to many conspicuous sales successes. The same expert Package Design and Merchandising Service . . . the development of years of undisputed leadership in transparent packaging . . . is available at any time to increase the sale of *your* product.

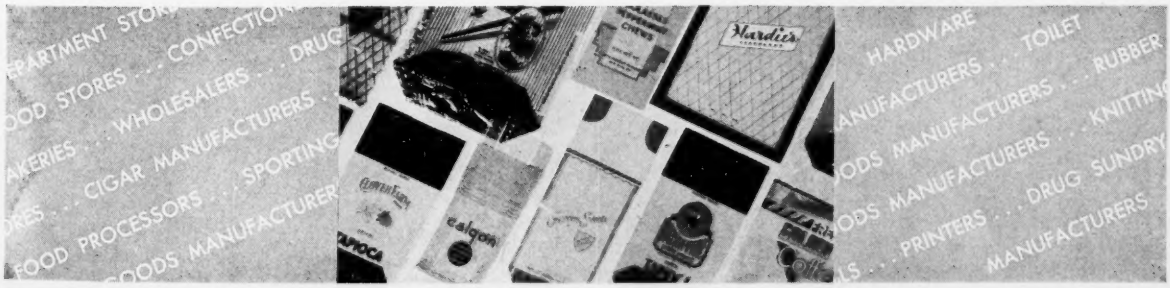
If your product does not lend itself to packaging in Cellophane, you can count on us to tell you. If it does, we will very likely be able to suggest designs and merchandising ideas leading to record sales. Write, telephone or call on any of our representatives or offices.

THE DOBECKMUN CO.

Leaders in Fabricating and Printing Cellophane

3301 Monroe Avenue **Cleveland, Ohio**

BRANCH OFFICES: New York, 11 W. 42nd St ; Chicago Merchandise Mart; Philadelphia, 1528 Walnut St.; Boston, 10 High St. REPRESENTATIVES: Baltimore, Dallas, Denver, Detroit, DesMoines, Houston, Kansas City, Little Rock, Los Angeles, Memphis, Minneapolis, Peoria, Pittsburgh, Portland (Ore.), Omaha, Red Lion (Pa.), Salt Lake City, San Antonio, San Francisco, St. Louis, Syracuse and Tampa.



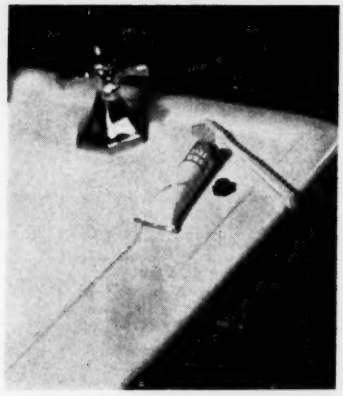
All Eyes Are On Your Product

Yes, all eyes are focused on your product from the time it leaves your factory until it has all been used. And in order that your customers may think well of your product it must be packaged in a neat, strong container—one that will give maximum service and one that will look well even though subjected to unusually rough treatment in the home.

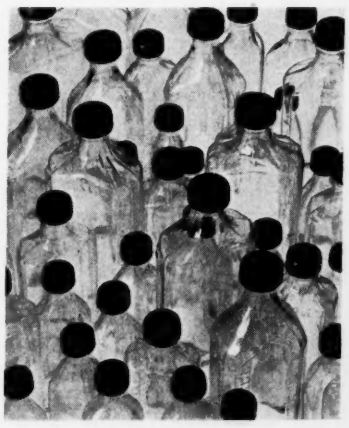
Wheeling Collapsible Tubes and Plastic Caps are made by men with years of experience in making such things. These tubes are made of the finest materials available. They are formed with the aid of the most modern machinery. They are designed by artists and made by artisans.

If packaged in Wheeling Collapsible Tubes, you may have every confidence that your product will look its best on the dealer's shelf or in the home; before the eyes of a prospective buyer or the eyes of an old friend.

Both Wheeling Collapsible Tubes and Plastic Caps are made to insure strength and durability without sacrifice of beauty of design. We will welcome an inquiry.



Wheeling Tubes and Caps add grace and beauty to your product.



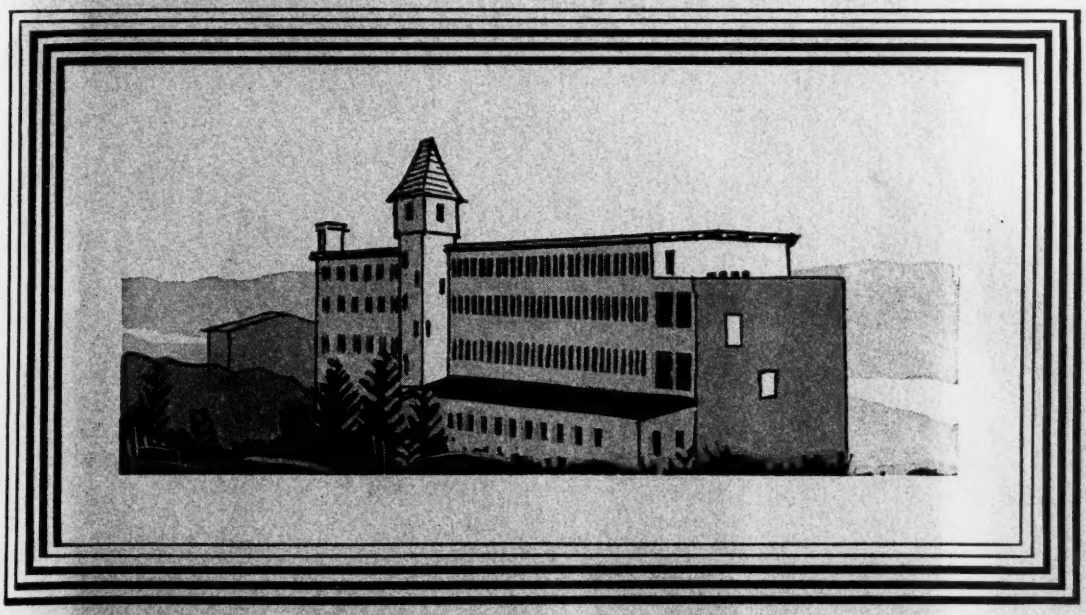
Wheeling Plastic Caps are built on scientific principles to provide greatest strength where it is most needed. They are also designed to add beauty to bottle packaged products.

WHEELING STAMPING COMPANY

Factory; Wheeling, W. Va.
B. E. Stover, Sales Manager

Representative: Geo. K. Diller
90 W. B'way, New York

WHEELING
PLASTIC CAPS AND COLLAPSIBLE TUBES



AT BROOKFIELD AND WARE, MASSACHUSETTS, ARE

PACKAGING PAPER Headquarters

•

For package and mailing labels
McLaurin-Jones "Guaranteed Flat" Gummed Papers

For ungummed labels
Ware Coated and Metallic Labels

For box coverings
Ware Box Covering Papers and Ware Foils

For set-up boxes
Ideal Gummed Box Stay

For shipping containers
Ideal Gummed Cambric Tapes

For package sealing
Blue Star Sealing Tapes

•

A McLAURIN-JONES Product

McLaurin-Jones also manufactures Ware Coated Book Papers and Post Cards, Ware Metallic Papers, Ideal Gummed Hollands, Ideal Photomount, Ideal Head Bands, Ideal Binding Cloth, Ideal Cloth Lined Papers, Ideal Gummed Veneer Tapes, and Ideal Fly Ribbon

McLAURIN-JONES COMPANY

Brookfield, Massachusetts • Mills at Brookfield and Ware

OFFICES:

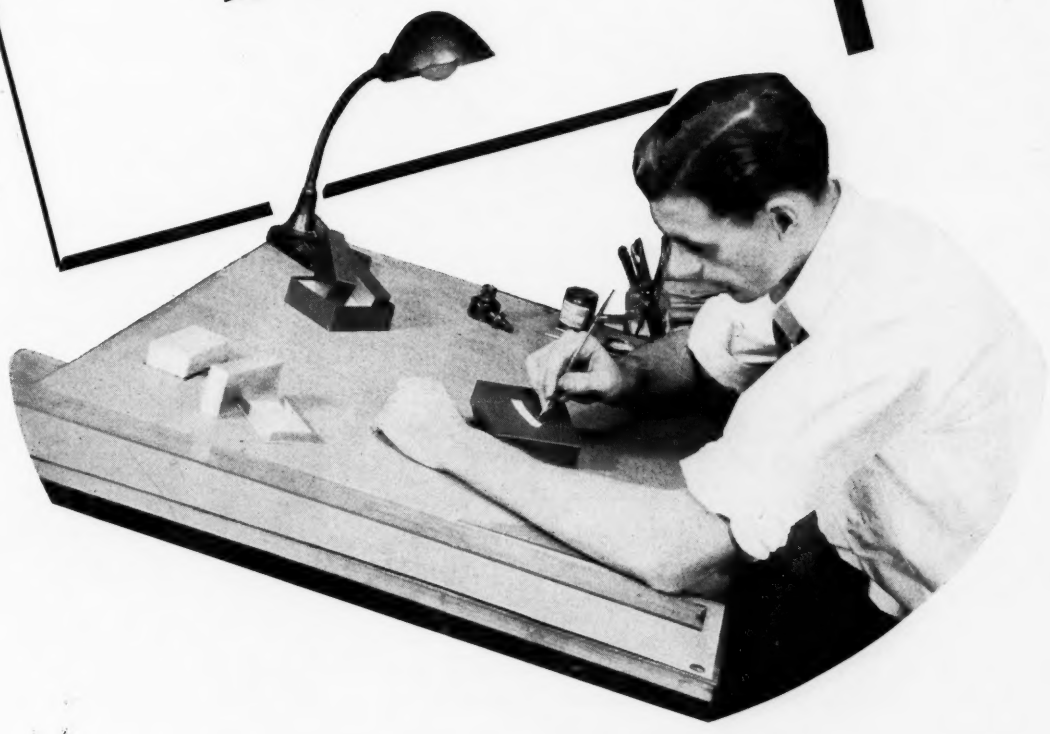
150 Nassau Street
New York

Merchandise Mart
Chicago

604 Cotton Exchange Building
Los Angeles

This is Old Tavern Gold, Label and Box Covering Paper

TODAY BOXMAKING IS AN ART

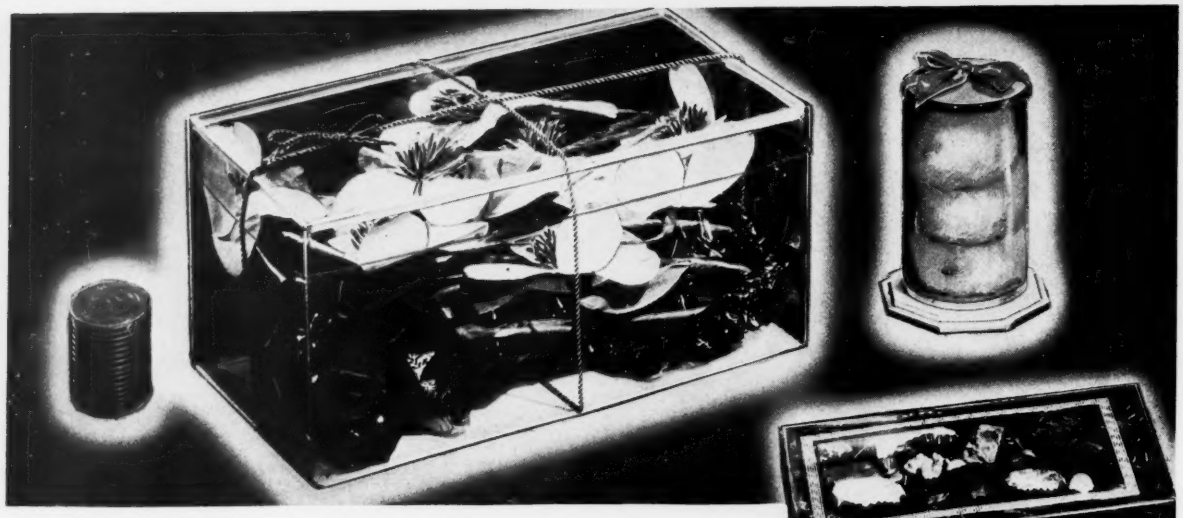


Boxmaking has ceased to be merely a craft. Boxes, today, must be more than mere board and paper. They must—by the beauty of their appearance, the eye appeal of their coloring, the ingenuity of their construction—bring that instant, interested attention that converts the passerby into a purchaser.

To aid you in securing boxes that do a better selling job, The Waterbury Paper Box Company has installed its own Art and Design Department, under the able direction of an experienced illustrator and package designer. Backed by one of the most modern plants in the industry, this department is at the service of all responsible manufacturers. Place your problems before it. Write to—

THE WATERBURY PAPER BOX CO.

New York Office	New England Representative	Chicago Office	San Francisco, Cal.
F. L. BUTZ	ROBERT E. CROTTY	CHAS. A. RINDELL	CHAS. H. CURRY
393 Seventh Ave.	Waterbury, Conn.	64 W. Randolph St.	420 Market St.



WHEN SEEN IT'S SOLD!

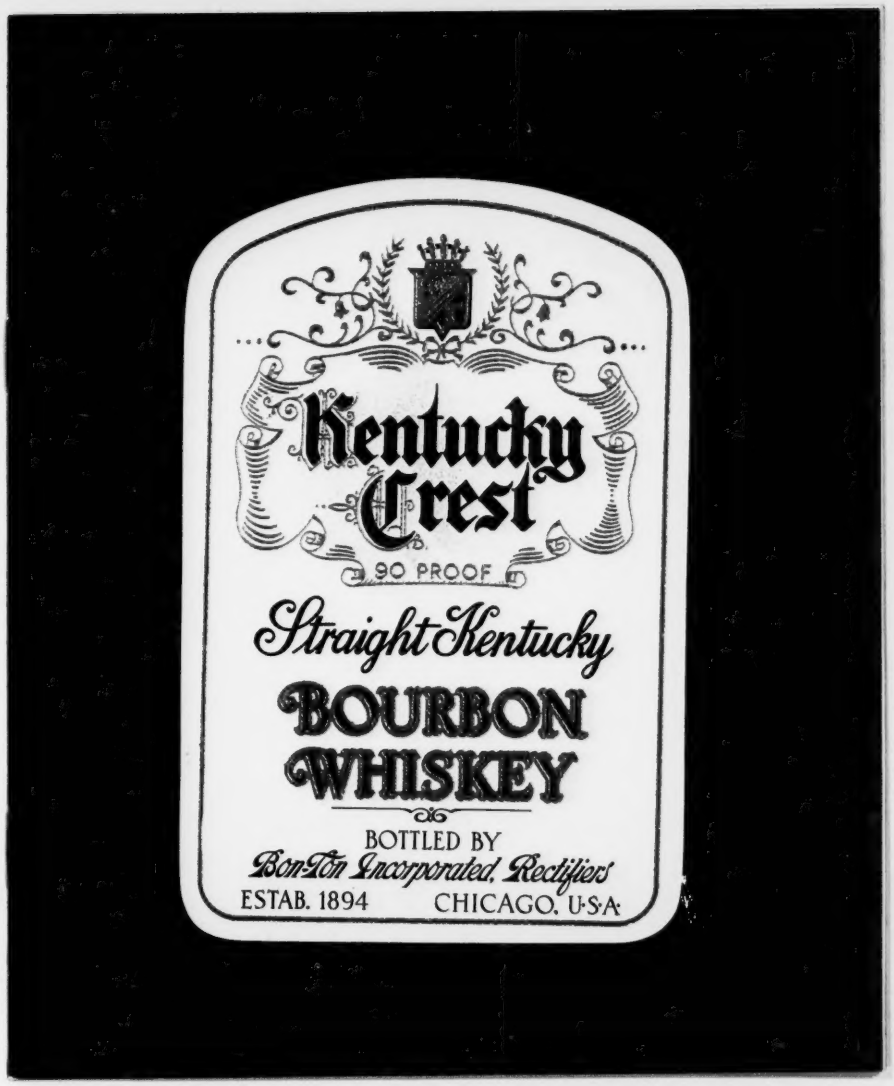
Pack your product in TRANSPARENT SEE-THRU CONTAINERS. People, after all, have little interest in boxes and wrappings. It's the product that they want to see. They want to know how many articles they'll get. . . what colors may be had. . . how big? . . . how small? . . . how attractive?

Until See-Thru made it possible, there was no means of providing full product-visibility to a box-packed item while insuring dust, moisture and air protection. Today, See-Thru Containers combine the sturdiness of the box or can with the sales advantages of transparent wrapping.

Send us your product and let us submit a package around it at no cost to you.

SEE-THRU CONTAINER CORP.

2220—40th Ave.
LONG ISLAND CITY, N. Y.
Stillwell 4-3936



VIRKOTYPE PROCESS

PROVED IN A NEW FIELD

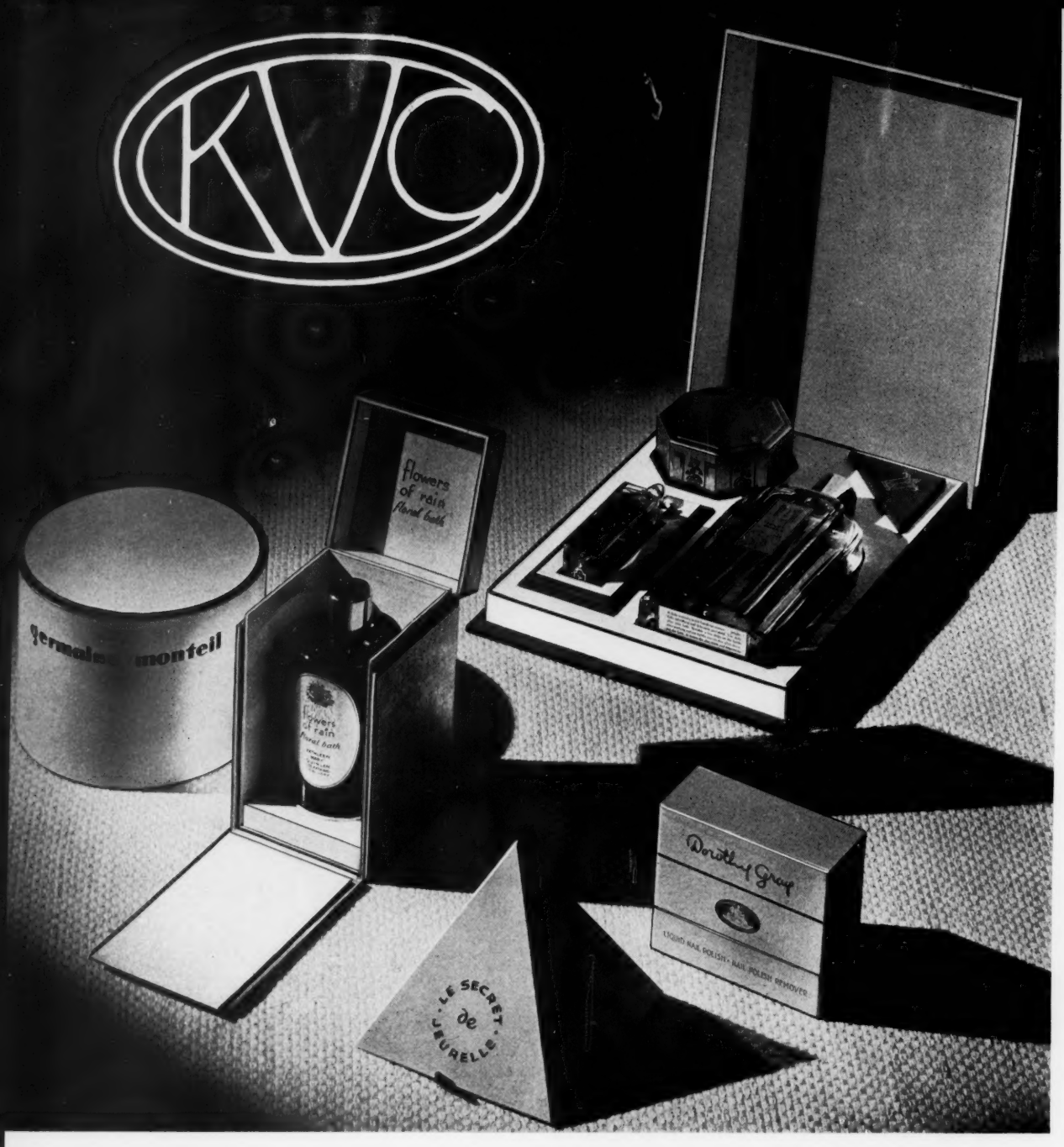
In their quest for the unusual in Label effects, Bon Ton Incorporated were among the first of the renowned liquor interests to recognize the possibilities of the VIRKOTYPE Process.

The attached label is a specimen which brought an immediate response from the trade.

As a result, more of their label designs are being adapted to the VIRKOTYPE Process.

DOMORE AUTOMATIC MACHINES MANUFACTURED BY
PAUL J. BARNARD MFG. CO.
(FORMERLY AUTOMATIC PRINTING DEVICES CO.)
1600 JUNCTION AVE.
RACINE, WISCONSIN

VIRKOTYPE MATERIALS MANUFACTURED BY
WOOD, NATHAN & VIRKUS CO., Inc.
112 CHARLTON STREET, NEW YORK CITY



The Karl Voss Corporation is known as this country's finest maker of fine boxes . . . a distinction gained through years of service to leading manufacturers. We show above but a few of the hundreds of packages planned and produced in our plant during the last year. If you seek a package as distinguished as your product, we suggest that you consult . . . without obligation, of course, . . . with one of our executives.

KARL VOSS CORPORATION

Division of Shoup-Owens, Inc.

HOBOKEN NEW JERSEY

KVC

NUTS
SAUSAGE
PIES
CANDY
DRIED FRUIT
COOKIES
COFFEE ROLLS
CAKES
CANDIED FRUITS

"EYE APPEAL"

TELLS THE STORY OF THIS SENSATIONAL PACKAGE SUCCESS

Every few years, some simple invention revolutionizes a packaging procedure. Such an invention is the new Chippewa Pie or Cake Container . . . so simple, you wonder why it wasn't invented years ago . . . so successful, so attractive it 'clicks' instantly with retailers and consumers.

Chippewa Snap-Ons provide a clean, dustproof, protective package for even the most delicate of pies or cakes. They will protect meringues or frostings . . . permitting removal of the contents of the container without harm to the cream or meringue. Stales and breakage are cut to incredibly low levels.

The slotted Snap-On Container is a complete, one-second assembly . . . there is no labor of tucking, folding or stapling.

Dozens of large pie and cake bakeries are already (December 1934) using this new package with sensational success. One, two or three color printing is practical on the fine, sturdy stock used.

If you are packaging nuts, sausage, candied and dried fruits, cookies, coffee rolls, cakes, pies, etc., you should investigate this interesting development.

WRITE!

CHIPPEWA PAPER PRODUCTS, INC.

PACKAGE DESIGNERS

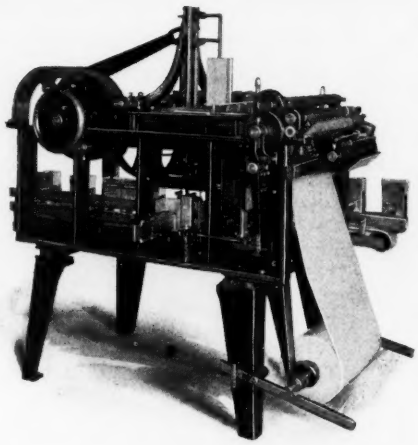
522 W. ERIE ST.—CHICAGO

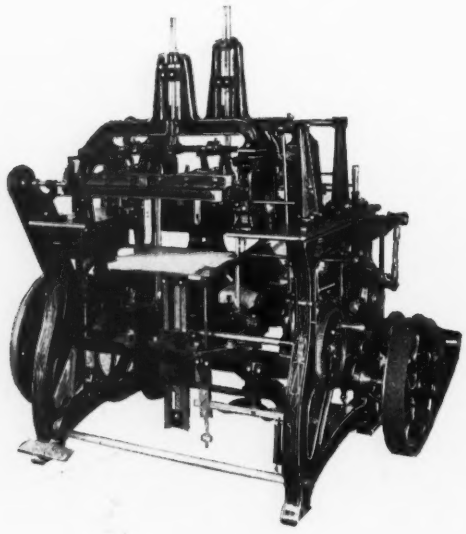
Patents Applied For

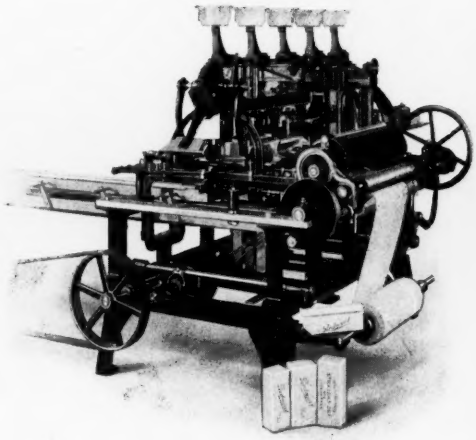
NATIONAL EFFICIENCY

SAVES TIME, LABOR, STOCK and SPACE

The National Line, of weighing, filling, sealing and box-making machinery is distinguished by its ability to combine speed with accuracy, low cost with economy of operation. A few of these machines are here described, but space limitations prohibit the full description you will want. Write us, today, for full information about any of the machines here shown . . . or state your problem. Chances are that National engineers have already solved it.

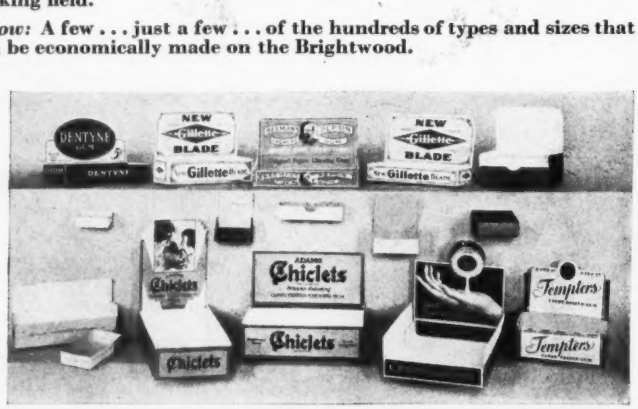






Above: **The New Improved Brightwood Machine for making set-up and folding boxes. The standard of all-around utility in the box-making field.**

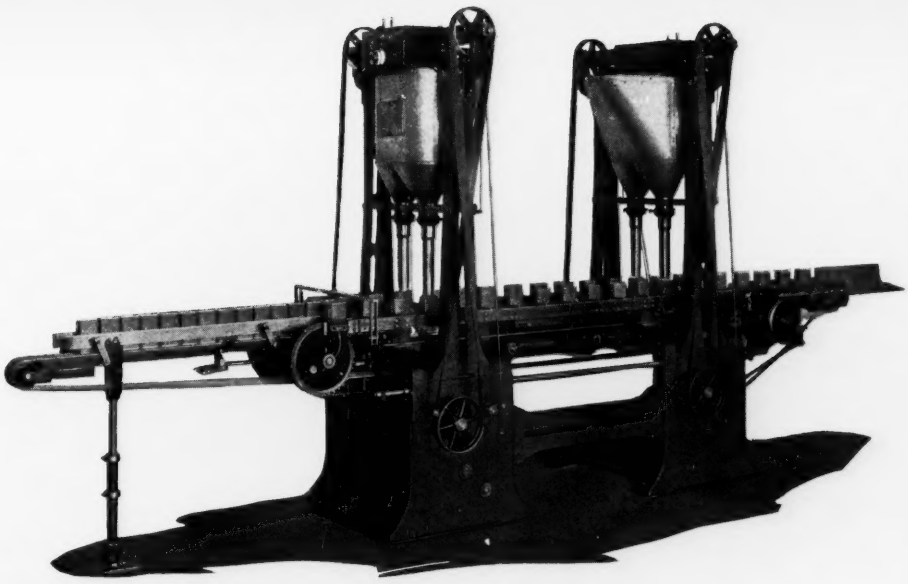
Below: **A few . . . just a few . . . of the hundreds of types and sizes that can be economically made on the Brightwood.**

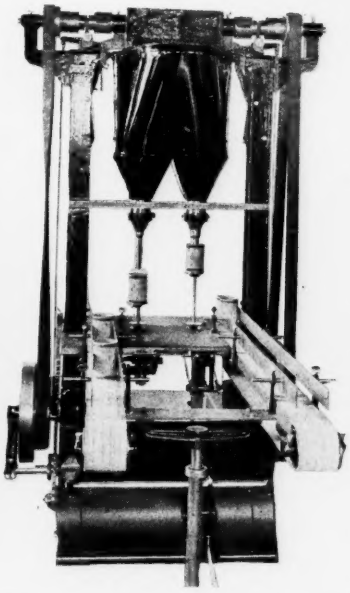


The National Lining-bag maker and inserter (top) and the National Wax and "Cellophane" Wrapper are typical of the efficiency of the National Sealing Machine Line. The liner makes and inserts a glued bag of glassine "cellophane" parchment or plain paper, working from roll stock at high speeds.

The Wrapper hermetically seals a transparent "cellophane" or waxed-glassine paper, forming a seam on side or bottom of package as preferred.

All our machines are easily and quickly adjustable to a wide range of sizes and shapes and may be automatically connected in series in many optional floor arrangements. All machines are set up in a complete unit or singly and tried on your own product before leaving our plant.





NATIONAL BOND GROSS WEIGHT WEIGHERS are made in seven different sizes and models to meet practically every consumer's problem.

Model MN Gross Weigher—a double line, tandem station machine, which automatically divides empty containers into two lines and assembles filled ones into one line. The first two stations fill by volume and the other two accurately weigh. Power agitator, and shaker or plunger device is optional equipment. Package limits are up to 10 in. high, and with a base up to 5 in. long by 3⅞ in. wide.

Speed: 50 to 120 per minute. Floor space: 4 ft. 2 in. wide by 16 ft. long. Power: 1 to 1½ hp. drive motor. Operators required: none.

Model MH Twin Semi-automatic, with an operator to handle each package twice, is popularly used to duplicate the work of model ML. It is slower but far more flexible, as it may also be equipped as a twin weigher, packer or filler. In such case the operator handles two packages simultaneously. 20 to 40 canisters per minute depending on material.

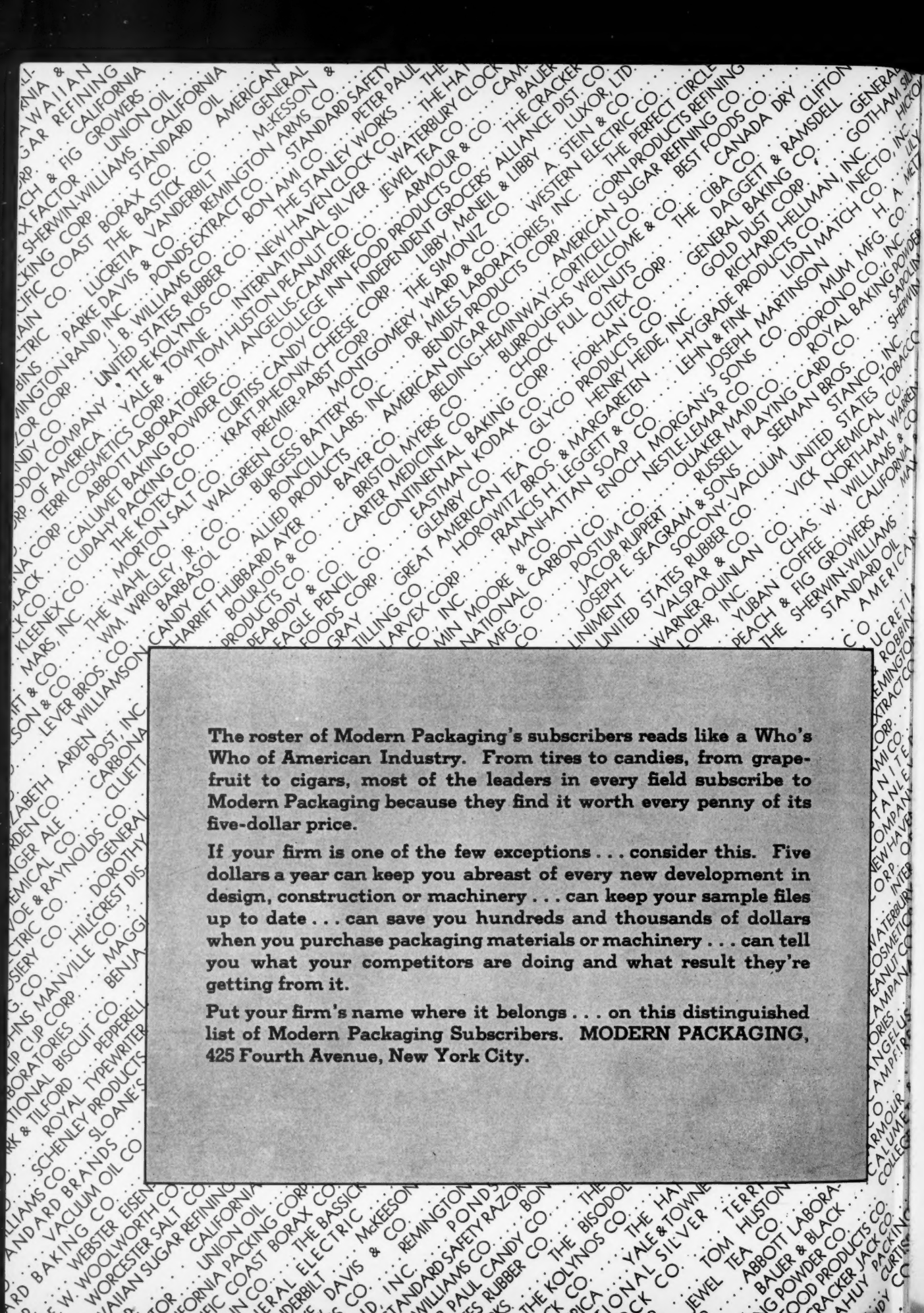
NATIONAL SCOTT NET WEIGHT WEIGHERS

This is the popular "tripod" mounting, to set on the work table. Shipped all assembled—ready for work. Also supplied with "pedestal" mounting, to stand on the floor or with a portable "carriage" mounting, to hang from a track, for use under two or more supply hoppers. These gravity-fed machines require no power, and will weigh (net) bean or steel-cut coffee, corn meal, granulated soap, rice, salt, sugar, tapioca, etc., at from 20 to 30 packages per minute, with a net cumulative variation in weight guaranteed not to exceed 2 ounces on each 100 packages. Choice of interchangeable sizes—determined by the range of weights to be handled.

Power Feeder can also be furnished for non-free-flowing material.

NATIONAL PACKAGING MACHINERY CO.
DIVISION OF
UNITED STATES AUTOMATIC BOX MACHINERY CO., INC.
459 WATERTOWN STREET, NEWTONVILLE
BOSTON, MASS.

New York Office—30 Church Street, Room 436
Cleveland Office—4601 Pearse Ave.
Chicago Office—53 W. Jackson Blvd., Room 447
London Agent—C. S. Du Mont, Ltd., Victoria Street, London, England



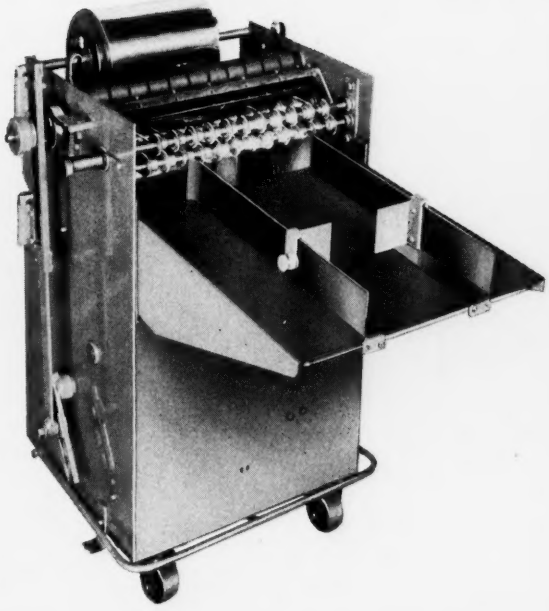
The roster of Modern Packaging's subscribers reads like a Who's Who of American Industry. From tires to candies, from grapefruit to cigars, most of the leaders in every field subscribe to Modern Packaging because they find it worth every penny of its five-dollar price.

If your firm is one of the few exceptions . . . consider this. Five dollars a year can keep you abreast of every new development in design, construction or machinery . . . can keep your sample files up to date . . . can save you hundreds and thousands of dollars when you purchase packaging materials or machinery . . . can tell you what your competitors are doing and what result they're getting from it.

Put your firm's name where it belongs . . . on this distinguished list of Modern Packaging Subscribers. MODERN PACKAGING, 425 Fourth Avenue, New York City.

SAVE 25% AND MORE ON WRAPPING COSTS

Themco Fully Automatic Sheeters and Stackers can cut your wrapping costs by as much as 25%. Transparent cellulose rolls cost 17% less than sheets and with the Themco you get sheets of exactly the desired size when and as you want them—in any part of your plant (without the wastage always present when stock sheets are used). The Themco cuts and stacks five to six thousand sheets per hour. It may be instantly adjusted to any size of sheet or roll. In candy or confectionery plants, and in all other cases where a wide variety of sizes and unusual peaks in demand occur, the Themco can provide distinct and worthwhile savings—can pay for itself in a few months. Investigate this machine. Clip the attached coupon and mail it for full information.



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